

Prairie State Achievement Examination

2013–2014



Overview and Preparation Guide for PSAE Day 2

Illinois State Board of Education

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Initialisms

PSAE—Prairie State Achievement Examination

ISBE—Illinois State Board of Education

Prairie State
Achievement Examination

Overview

An Overview for Students

The Illinois State Board of Education (ISBE) provides this booklet to help you prepare for the Prairie State Achievement Examination (PSAE). The first part of this booklet is an overview that answers some basic questions about the PSAE: What is it? What will it cover? When will it be given? The second part of this booklet is a preparation guide for the three tests that you will take on Day 2 of the PSAE.

What is the Prairie State Achievement Examination, or PSAE?

The PSAE is a state assessment given to grade 11 students and used for accountability.

What subjects does the PSAE test?

The 2014 PSAE tests four academic subjects: reading, mathematics, science, and writing. PSAE is a series of eight tests which most students take over the course of two days.

What tests will I take on each day of PSAE testing?

You will take the ACT Plus Writing on Day 1. The ACT® college readiness assessment multiple-choice battery consists of four tests: English, mathematics, reading, and science. The ACT Writing Test is a 30-minute test with a single prompt question.

On Day 2 you will take one test developed by ISBE with assistance from Illinois teachers and two ACT WorkKeys® tests. The ISBE-developed test is in science. The ACT WorkKeys tests are in reading and mathematics.

When will I take the PSAE?

You will take the PSAE on April 23 and 24, 2014. For students who are not in school on one or both of these test dates, makeup tests are given two weeks later on May 7 and 8, 2014.

If you will be taking the PSAE with accommodations, you will have a two-week testing window during which your high school may administer the Day 1 and Day 2 tests.

What is the purpose of the PSAE?

The PSAE measures your academic achievement with respect to the Illinois Learning Standards and determines whether you will receive recognition for excellent performance. PSAE results also show the progress that schools and the state have made toward meeting the Standards. Current state law requires that students take the PSAE as a condition for receiving a regular high school diploma, unless a student is exempt. See www.isbe.net/assessment/psae.htm for more information about this requirement.

What are the Illinois Learning Standards?

The Illinois Learning Standards are statements of the specific knowledge and skills that every public school student should learn in school. Thousands of Illinois citizens—teachers, parents, school administrators, employers, community leaders, and representatives of higher education—identified what they believe you will need to know and be able to do after you graduate from high school.

Whether you intend to go directly to a job or plan to attend a vocational or technical school, junior college, or four-year college, you will have the academic background you will need to compete successfully if you meet the Illinois Learning Standards.

Where can I find more information about the Illinois Learning Standards?

To read more about the Standards, visit the website maintained by the Illinois State Board of Education (ISBE) at www.isbe.net/ils/default.htm.

Why does the PSAE include different kinds of tests?

The PSAE is designed to measure progress toward meeting the Illinois Learning Standards and also to provide students with broad achievement information. For these reasons, ISBE includes tests that measure the Illinois Learning Standards and that also provide a measure of workplace skills and readiness for college.

The four ACT multiple-choice tests measure what you have learned in English, mathematics, reading, and science. The ACT Writing Test measures what you have learned with regard to making and expressing judgments, developing and supporting a viewpoint, organizing and presenting ideas logically, and communicating clearly in original, first-draft writing. The two ACT WorkKeys tests add depth and breadth; they address the “Applications of Learning” that are part of the Standards for every academic area, and they increase the range of skills in reading and mathematics that are assessed. Complete coverage of the Standards for science is accomplished by the inclusion of an ISBE-developed test in science.

Your PSAE score for each subject will be based on two of the tests that make up the PSAE. For example, PSAE science consists of ACT Science on Day 1 and ISBE-Developed Science on Day 2. The charts on pages 11 and 12 show how the tests that make up the PSAE fit together to assess each subject.

Why are ACT WorkKeys tests included on the PSAE?

ISBE decided to incorporate two ACT WorkKeys tests, *Reading for Information* and *Applied Mathematics*, into the PSAE for three reasons:

- (1) ACT WorkKeys tests assess whether you can apply what you have learned in the classroom to non-classroom situations.
- (2) ACT WorkKeys tests give you a set of scores that you can use to identify the workplace skills you already have and those you need to acquire.
- (3) ACT WorkKeys scores are used by many employers as part of the process of determining whether a job applicant is suited for a particular job or training program. ACT WorkKeys skill levels have been used to describe thousands of jobs ranging from entry-level to those requiring postsecondary degrees. You may include your ACT WorkKeys scores in your portfolio and present them for comparison with the requirements of the job you are seeking. You may also use your scores toward earning an ACT National Career Readiness Certificate™ (ACT NCRC™).

What are my obligations on test day?

The PSAE is a confidential exam. You are not permitted to discuss the questions during or after the test. Your scores may be cancelled if there is reason to believe that the scores are invalid. Terms and conditions associated with the ACT test are found in the *Taking the ACT* instruction booklet and those associated with the two ACT WorkKeys tests are found in this booklet (page 34).

How and when will I receive my PSAE scores?

In the fall, schools will receive the official PSAE score reports for individual students. In addition to your PSAE score report, you will receive an ACT Plus Writing score report and a score report for each of the two ACT WorkKeys tests. ACT will mail your ACT Plus Writing score report to your home address in May or June. The ACT WorkKeys *Reading for Information* and *Applied Mathematics* score reports will be sent to schools about the same time as the PSAE score reports in the fall.

Will the PSAE scores become part of my school transcript?

Your PSAE score in each subject will be recorded on your transcript, and the subjects in which you earned a Prairie State Achievement Award will be indicated. However, the ACT Plus Writing score earned through PSAE testing may be included in your transcript only by written permission.

What is a Prairie State Achievement Award?

A Prairie State Achievement Award is special recognition given for excellent performance. You will earn an award for every PSAE subject in which your score is at the Exceeds Standards level. (There is no score or award for the PSAE as a whole.) Each award you receive will be noted on your transcript, and you will receive a certificate showing the subjects in which you received an award. Certificates will be sent to your school with the PSAE score reports in the fall.

Will I receive ACT scores that I can use when I apply to colleges?

Yes, as long as you test under standard conditions or with ACT-Approved accommodations (if applicable). You can send the ACT scores that you receive from PSAE testing to colleges of your choice, just as you can send ACT scores from national testing. You may choose to have your scores sent to up to four colleges at no cost to you. You will be given information about how to have your test scores sent to additional colleges when you receive your ACT scores. ACT will mail your score report to your home address in May or June.

Are ACT scores from state PSAE testing accepted by colleges and the Illinois Student Assistance Commission (ISAC)?

Yes. Colleges and universities throughout the United States and ISAC have indicated their willingness to use ACT scores reported from state testing.

Are ACT scores from state PSAE testing accepted by the National Collegiate Athletic Association (NCAA)?

In 2006, the National Collegiate Athletic Association (NCAA) implemented rules changes that allow the use of state ACT scores in determining initial eligibility for participation in Division I and Division II sports. These changes were effective January 9, 2006, for Division II and August 1, 2006, for Division I. As a result, students entering college on or after August 1, 2006, can use state ACT scores for both Division I and Division II initial eligibility. Questions may be directed to the NCAA Eligibility Center at 877.262.1492.

Are the ACT WorkKeys scores from PSAE testing accepted for the ACT National Career Readiness Certificate (ACT NCRC)?

Yes, if the tests are taken under standard conditions or with approved accommodations, ACT WorkKeys scores may be used toward an ACT National Career Readiness Certificate. However, scores earned for ACT WorkKeys *Applied Mathematics* using the Spanish DVD format will not be applicable for the ACT NCRC.

Should students with disabilities take the PSAE?

Students with disabilities must take the PSAE unless they have an Individualized Education Program (IEP) that identifies regular state testing as being inappropriate for them, even with accommodations. Decisions about participation and any need for accommodations that students with disabilities may have are made on an individual basis by each student's IEP team.

Should students with limited English proficiency take the PSAE?

Students with limited English proficiency must take the PSAE. As necessary, they may receive state-allowed accommodations during testing to assist them in understanding the tests. Because these accommodations are not approved by ACT, ACT scores from these administrations cannot be reported to colleges or universities. If translated versions of the test or other unapproved accommodations are used, ACT WorkKeys scores are not eligible for the NCRC.

Spring 2014 Test Administration Schedule

What is the 2014 test administration schedule?

Day 1 Wednesday, April 23, 2014	ACT English ACT Mathematics ACT Reading ACT Science ACT Writing	45 minutes (75 questions) 60 minutes (60 questions) <i>[required 15-minute break]</i> 35 minutes (40 questions) 35 minutes (40 questions) <i>[required 5-minute break]</i> 30 minutes (one prompt question)
Day 2 Thursday, April 24, 2014	ISBE-Developed Science ACT WorkKeys <i>Applied Mathematics</i> ACT WorkKeys <i>Reading for Information</i> ACT WorkKeys <i>Locating Information</i> *	40 minutes (45 questions) 45 minutes (33 questions) <i>[required 15-minute break]</i> 45 minutes (33 questions) 45 minutes (38 questions)

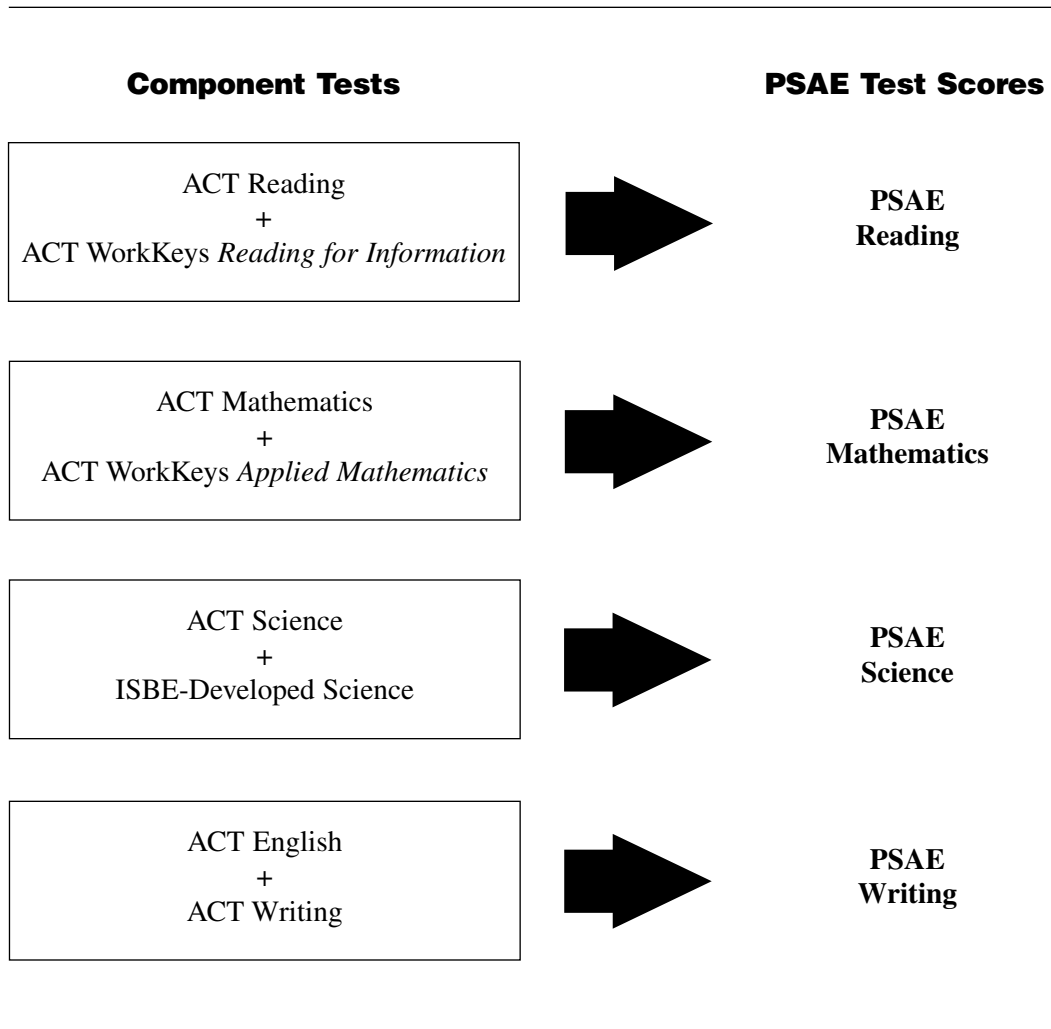
*ACT WorkKeys *Locating Information* scores will not be used in formulating a PSAE score. However, eligible and qualifying scores may be combined with eligible and qualifying *Reading for Information* and *Applied Mathematics* scores to earn an ACT National Career Readiness Certificate.

Note

Standard time makeup testing for students who are not in school on one or both of these test dates (April 23 and 24) will follow this schedule and be administered on May 7 (Day 1) and May 8 (Day 2).

The window for Day 1 accommodations testing is April 23–May 7, 2014, and the window for Day 2 accommodations testing is April 24–May 8, 2014.

PSAE Test Results



Description of the Prairie State Achievement Examination

Descriptions of Component Tests	
PSAE Test Scores	Component Tests
PSAE Reading	<p><i>ACT Reading</i> (35 minutes, 40 multiple-choice questions)</p> <p>ACT reading includes four 750-word passages. Each passage is followed by 10 multiple-choice questions. Two of the passages are literary texts (one fiction and one nonfiction). The other two passages are informational texts (one social science and one natural science).</p>
	<p><i>ACT WorkKeys Reading for Information</i> (45 minutes, 33 multiple-choice questions)</p> <p><i>Reading for Information</i> includes 15 reading selections that range in length from about 50 up to 300 words. Each selection is followed by one, two, or three multiple-choice questions. The selections are arranged in order of increasing difficulty.</p>
PSAE Mathematics	<p><i>ACT Mathematics</i> (60 minutes, 60 multiple-choice questions)</p> <p>ACT mathematics questions require the use of reasoning skills to solve practical problems in mathematics in six areas: pre-algebra, elementary algebra, intermediate algebra, coordinate geometry, plane geometry, and trigonometry. Certain types of calculators may be used; see <i>Preparing for the ACT</i> for more information.</p>
	<p><i>ACT WorkKeys Applied Mathematics</i> (45 minutes, 33 multiple-choice questions)</p> <p><i>Applied Mathematics</i> measures a student's skill in using mathematical reasoning to solve work-related problems. Test takers set up and solve problems like those that occur in a workplace. A calculator may be used, and a formula sheet is provided. The questions are arranged in five levels of increasing difficulty. ACT recommends the use of a calculator; see page 40 of this booklet for more information.</p>
PSAE Science	<p><i>ACT Science</i> (35 minutes, 40 multiple-choice questions)</p> <p>ACT science presents seven sets of scientific information in the form of reading passages and data summaries. Each is followed by a series of multiple-choice questions. The content includes biology, chemistry, physics, and Earth and space sciences.</p>
	<p><i>ISBE-Developed Science</i> (40 minutes, 45 multiple-choice questions)</p> <p>The ISBE-developed science assessment presents scientific information in the form of short prompts, with each followed by one multiple-choice question. Questions are distributed equally across life sciences, physical sciences, Earth and space sciences, and science, technology, and society.</p>
PSAE Writing	<p><i>ACT English</i> (45 minutes, 75 multiple-choice questions)</p> <p>ACT English measures two aspects of standard written English: (1) conventions, including punctuation, grammar and usage, and sentence structure [40 questions] and (2) rhetorical skills, including strategy, organization, and style [35 questions]. The test includes five prose passages, each followed by several multiple-choice questions. Different types of passages are included so that a variety of skills are assessed.</p>
	<p><i>ACT Writing</i> (30 minutes, one prompt question)</p> <p>The ACT Writing Test consists of one writing prompt that briefly states an issue and describes two points of view on the issue. Students respond to a question about their position on the issue. (Students' essay scores are not affected by the point of view they take on the issue.)</p>

Prairie State
Achievement Examination

**Preparation Guide
for PSAE Day 2**

Preparing for the
ISBE-Developed Science
Assessment

ISBE-Developed Science Assessment

You will take the ISBE-Developed Science assessment on Day 2 of the PSAE. It contains 45 multiple-choice items. You have 40 minutes to complete this assessment.

The questions on the science assessment measure critical thinking skills required in the natural sciences, including interpretation, analysis, evaluation, reasoning, and problem solving. The assessment presents scientific information in the form of short prompts, with each followed by one multiple-choice question.

Test questions are distributed equally across the Illinois Learning Standards that cover science inquiry; the life, physical, and Earth and space sciences; and the relationship among science, technology, and society.

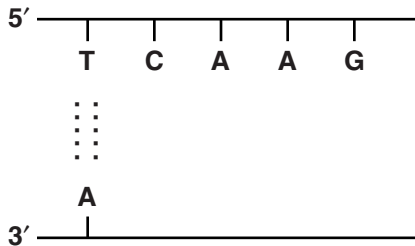
The following pages contain 45 sample questions that were written for the ISBE-Developed Science assessment. Following the samples, you will find a key on page 32 that gives the correct answer for each question.

Science

1

Use this information to answer the next question.

This chart shows a strand of DNA undergoing replication.



Assuming that no mistakes are made, what will be the code for the complementary (daughter) strand of DNA that is being formed?

- A. 3' AGTTC 5'
- B. 3' AGCCT 5'
- C. 3' AGUUC 5'
- D. 3' ACTTG 5'

2

The leaf-tailed gecko, as its name suggests, has evolved a tail shaped like a leaf. In which habitat would this animal most likely be found?

- A. Rain forest
- B. Desert
- C. Tundra
- D. Prairie

3

During cellular respiration, energy from glucose is converted and stored for use by the cell in what form?

- A. As heat energy in water molecules
- B. As kinetic energy in ADP molecules
- C. As potential energy in oxygen molecules
- D. As chemical energy in ATP molecules

4

Messenger RNA contains 64 possible codons. Codons code for the 20 amino acids common to all organisms. Which explains the difference in the number of codons and amino acids?

- A. More than one amino acid can code for one codon.
- B. More than one codon can code for one amino acid.
- C. The remaining amino acids have yet to be discovered.
- D. Over half the codons are unable to code for these amino acids.

5

In the Midwest, the prevailing wind blows from which direction?

- A. North
- B. South
- C. East
- D. West

6

Which most likely occurs if two genes are found close to each other on a chromosome?

- A. The genes will be related to each other.
- B. The genes will have low recombination rates.
- C. The genes will have high recombination rates.
- D. The genes will code for the same trait.

7

A female horse has the genotype $RrTT$.

What allele combinations would most likely be present in her eggs?

- A. Rr, TT
- B. RT, rT
- C. RT, rT, Rr, TT
- D. RT, Rt, rT, rt

8

What best describes the reason for the loss of tall grass prairie ecosystems in Illinois?

- A. Changes in climate
- B. Introduction of non-native species
- C. Sudden natural disasters
- D. Increase in human activity

Science

9

Which best explains why ice floats in water?

- A. Ice is less dense than water.
- B. Ice is denser than water.
- C. Ice has a greater specific heat than water.
- D. Ice has a lower specific heat than water.

11

When a sample of gas in an expandable container is maintained at 0°C and 1 atm of pressure, it has a volume of 2.0 L.

Based on Boyle's law, what will the volume of the gas sample be if the pressure is increased to 3.00 atmospheres while the temperature is kept at 0°C ?

- A. 0.67 L
- B. 1.56 L
- C. 2.05 L
- D. 3.04 L

10

Which organisms in a community will have the highest concentration of pesticides in their tissues?

- A. Producers
- B. Primary consumers
- C. Secondary consumers
- D. Tertiary consumers

Periodic Table of the Elements

	1																18	
1	1 H 1.008															2 He 4.003		
2	3 Li 6.941	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
3	11 Na 22.99	12 Mg 24.31	3	4	5	6	7	8	9	10	11	12	13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95
4	19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.87	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.69	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.64	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
5	37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.96	43 Tc (98)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
6	55 Cs 132.9	56 Ba 137.3	57 La 138.9	72 Hf 178.5	73 Ta 180.9	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (209)	85 At (210)	86 Rn (222)
7	87 Fr (223)	88 Ra 226	89 Ac (227)	104 Rf (265)	105 Db (268)	106 Sg (271)	107 Bh (272)	108 Hs (277)	109 Mt (276)	110 Ds (281)	111 Rg (280)	112 Cn (285)	113 Uut (284)	114 Uuq (289)	115 Uup (288)	116 Uuh (293)	117 Uus (292)	118 Uuo (294)

Lanthanide series	58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (145)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
	Actinide series	90 Th 232.0	91 Pa (231)	92 U 238.0	93 Np (237)	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)

Potassium (K) is most likely to have similar chemical properties to which elements?

- A. Ca, Fe, Cu
- B. Li, Na, Cs
- C. Na, Ca, Rb
- D. Mg, Be, Sr

Science

13

What is the name of the process that forms water droplets on the outside of a cold glass of ice water during a warm, humid day?

- A. Boiling
- B. Melting
- C. Freezing
- D. Condensing

15

Methanol is a fuel with the potential to supplement or replace gasoline as an energy source. Which equation represents the reaction that takes place when methanol is burned?

- A. $\text{C}_2\text{H}_5\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 3\text{H}_2\text{O}$
- B. $2\text{CH}_3\text{OH} + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 4\text{H}_2\text{O}$
- C. $\text{CH}_3\text{OH} + \text{N}_2 + \text{H}_2 + \text{O}_2 \rightarrow 2\text{HNO}_3 + \text{CH}_4$
- D. $\text{C}_2\text{H}_5\text{OH} + \text{N}_2 + \text{H}_2 + \text{O}_2 \rightarrow 2\text{HNO}_3 + 2\text{CH}_4$

14

How many atoms are in exactly 6 g of carbon-12?

- A. 1 atom
- B. 12 atoms
- C. 3.01×10^{23} atoms
- D. 6.02×10^{23} atoms

16

Indicator	Acid color	pH range where color change occurs	Base color
Cresol red	Red	1.0 – 2.0	Yellow
Methyl orange	Red	3.2 – 4.4	Yellow
Bromthymol blue	Yellow	6.6 – 7.4	Blue
Phenolphthalein	Colorless	8.0 – 10.0	Pink

A solution turned yellow when either cresol red or bromthymol blue was added. What is the pH of the solution?

- A. Less than 3.2
- B. Greater than 6.6
- C. Between 2.0 and 6.6
- D. Greater than 7.4

17

Which most likely exhibits well-defined bedding planes?

- A. Gabbro
- B. Granite
- C. Obsidian
- D. Shale

18

Why is the accumulation of thick loess deposits an important factor in making Illinois an excellent area for growing crops?

- A. Loess forms an impermeable layer beneath the rich topsoil.
- B. Loess is a key component of the rich topsoil.
- C. Loess is made of heavy clay, which prevents erosion of the rich topsoil.
- D. Loess blows away easily and exposes the rich topsoil.

Science

19

To estimate the age of Earth, some scientists rely on radiometric dating involving the radioactive features of many elements. This technique can also provide evidence of which of these?

- A. The age of the universe
- B. The age of Earth's fossils
- C. The composition of the sun
- D. The composition of Earth's core

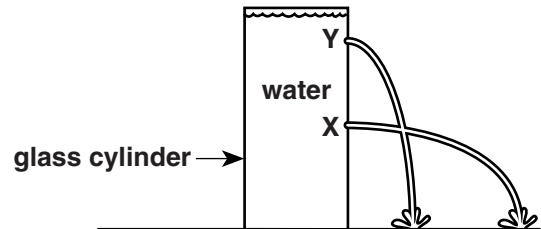
20

Which terrestrial planet has the densest atmosphere?

- A. Mercury
- B. Venus
- C. Earth
- D. Mars

21

Consider a 2-liter glass cylinder with two holes at different heights. The cylinder is filled with water, and water is allowed to flow through the two holes, as shown in the drawing.



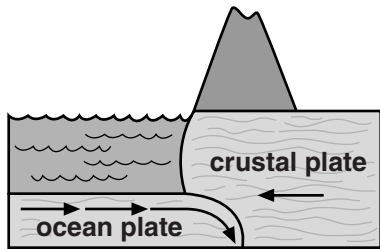
Why does the water flowing from hole X travel a greater horizontal distance than the water flowing from hole Y?

- A. Water pressure decreases with depth.
- B. Water pressure increases with depth.
- C. The density of water decreases with depth.
- D. The density of water increases with depth.

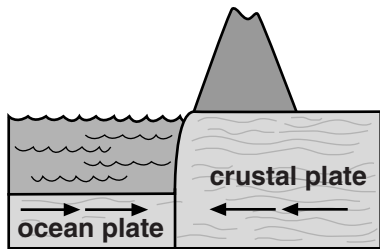
22

Which diagram shows what happens when an ocean plate and a crustal plate meet?

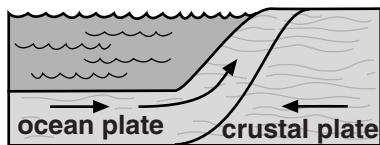
A.



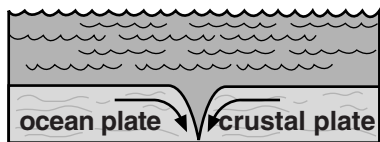
B.



C.



D.



23

Geologists examined the rock structure along a segment of the coastline of North America. They found several large tracts of land that contained rocks and fossils that were very different from those in adjacent tracts. Which best explains this observation?

- A. Alluvial deposition
- B. Plate tectonics
- C. Diverging boundaries
- D. Volcanic eruptions

24

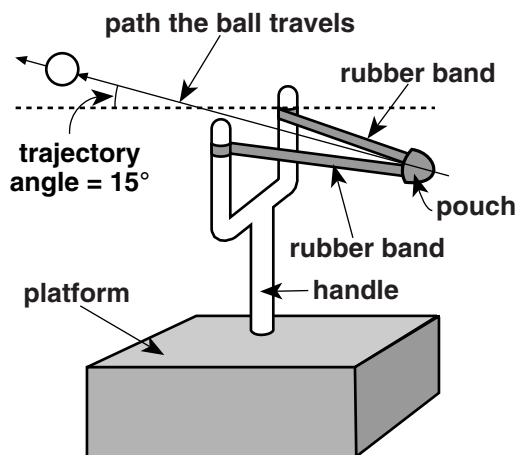
Which has the greatest effect on ocean tides?

- A. Comets
- B. Moon
- C. Sun
- D. Mars

Science

25

Rosa designed this slingshot device.



She wanted to determine the average distance a ball would travel when shot from a pouch attached to a pair of posts by rubber bands. In each trial, she shot 3 identical balls by pulling the pouch 10 cm behind the posts. She held the trajectory angle, the angle of the path of the ball, constant at 15° above horizontal. This chart shows the average distance the 3 balls traveled in each trial.

Trial	Average distance (m)
1	6.5
2	8
3	6
4	5.5

For one trial, Rosa increased the height of the platform beneath the slingshot device 50 cm. Which trial likely incorporated this design change?

- A. Trial 1
- B. Trial 2
- C. Trial 3
- D. Trial 4

26

Long ago, people believed that the Earth was at the center of our solar system and that all astronomical objects revolved around a fixed Earth. Today, it is understood that the sun is at the center of our solar system and that all objects in our solar system revolve around the sun.

Whose telescopic observations of the planets Jupiter and Venus supported this understanding?

- A. Copernicus
- B. Tycho
- C. Galileo
- D. Kepler

27

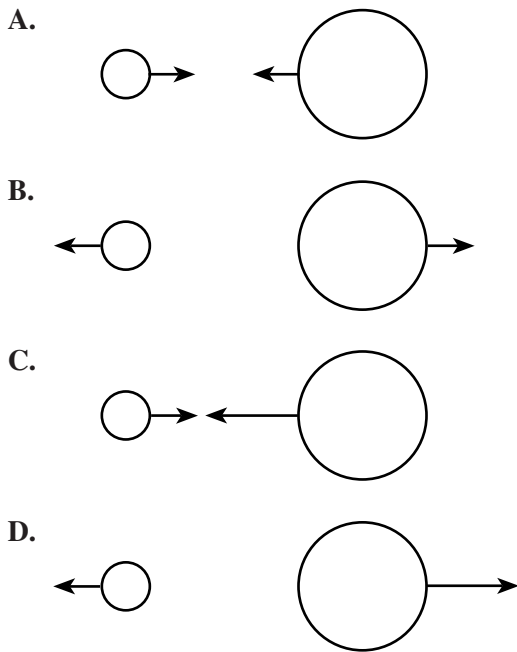
Which of these would require the least ethical judgment on the part of the experimenter?

- A. Testing for the transmission of the AIDS virus in human beings
- B. Testing for excessive iron in a city water supply
- C. Determining the effects on human life of a newly developed herbicide to be used in an agricultural area
- D. Dissecting a live frog in a high school biology class

28

Two spheres having unequal masses are isolated in space from all outside gravitational effects. The larger sphere in each figure below has twice the mass of the smaller sphere.

Which figure best illustrates the relative size and correct direction of the gravitational forces acting between the two masses?



30

Solution A has a pH of 5.0, while solution B has a pH of 7.0.

The $[H^+]$ of solution A is how many times as great as the $[H^+]$ of solution B?

- A. 2 times as great
- B. 100 times as great
- C. $\frac{1}{2}$ as great
- D. $\frac{1}{100}$ as great

31

Which of the four fundamental forces is the force that binds one atom to another?

- A. Gravitational force
- B. Electrical force
- C. Weak nuclear force
- D. Strong nuclear force

29

Which causes the aurora borealis (northern lights)?

- A. Solar wind
- B. Solar eclipse
- C. Lunar eclipse
- D. Comet debris

Science

32

As Earth orbits the sun, Earth travels in an elliptical path with the sun at one focus.

Which statement about the speed of Earth in its orbit is correct?

- A. Earth's speed is greatest when it is farthest from the sun.
- B. Earth's speed is greatest when it is nearest the sun.
- C. Earth's speed is constant throughout the orbit.
- D. Earth's speed increases with each orbit.

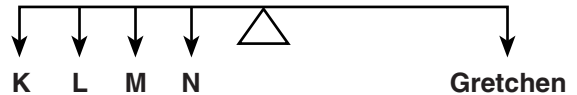
33

Which is a common characteristic of most comets?

- A. Comets' tails point toward the sun.
- B. Comets gain mass as they approach the sun.
- C. Comets lose mass as they approach the sun.
- D. Comets slow down as they approach the sun.

34

Gretchen and Pablo play on the seesaw at recess. The seesaw pivots at the center. Gretchen weighs 333 N and sits on one end of the seesaw.



If Pablo weighs 444 N, where should he sit to balance the seesaw?

- A. K
- B. L
- C. M
- D. N

35

What is the first thing a student in a laboratory class should do when a chemical spill occurs?

- A. Cover the spill with paper towels
- B. Clean the spill up and then notify the teacher
- C. Let the spill air dry
- D. Notify the teacher

36

Which two gases represent most of Earth's atmosphere?

- A. Water vapor, carbon dioxide
- B. Water vapor, nitrogen
- C. Oxygen, carbon dioxide
- D. Oxygen, nitrogen

37

New species can form when organisms are geographically isolated from parent colonies. Examples of barriers that can cause geographic isolation are mountain ranges, rivers, and glaciers. Why would barriers such as these cause new species to evolve over time?

- A. Isolated populations can only breed among themselves, keeping genetic changes within the population.
- B. Isolated populations produce fewer offspring.
- C. Isolated populations will breed with other species to form new species.
- D. Isolated populations produce mutations more frequently.

38

Astronomers have discovered that stars may vary in mass from less than a tenth to more than two hundred times the mass of our sun.

As the mass of stars increases, how, if at all, is the lifetime of stars affected?

- A. The lifetime of stars generally increases.
- B. The lifetime of stars generally decreases.
- C. The lifetime of stars does not vary.
- D. The lifetime of stars varies, but with no general trend.

39

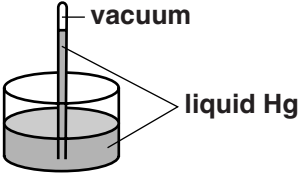
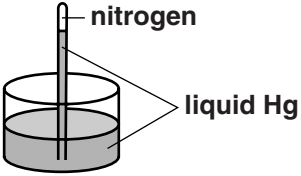
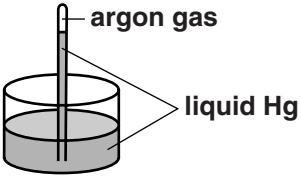
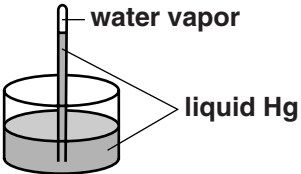
Which would be the best instrument for detecting earthquake waves?

- A. Seismometer
- B. Hydrometer
- C. Spectrometer
- D. Photometer

Science

40

Which design for building a sealed-tube barometer will work best?

- A.  vacuum
liquid Hg
- B.  nitrogen
liquid Hg
- C.  argon gas
liquid Hg
- D.  water vapor
liquid Hg

41

Why does the Southern Hemisphere have less variation in normal annual temperature than the Northern Hemisphere?

- A. The Southern Hemisphere has colder ocean waters.
- B. The Southern Hemisphere receives less solar radiation.
- C. The Southern Hemisphere has more cloud cover.
- D. The Southern Hemisphere has more water area.

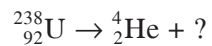
42

What is the best procedure for detecting the odor of an unknown liquid?

- A. Heat a small amount of the liquid to the boiling point and smell the vapor.
- B. Put a small amount of the liquid on your finger and after a few minutes smell the liquid remaining on your finger.
- C. With a cupped hand, pull air over the liquid towards your nose.
- D. With the cap on, turn the bottle upside down; then right the bottle, remove the cap, and smell the inside of the cap.

43

In the nuclear reaction below, what product would be formed?



- A. ${}_{90}^{234}\text{Th}$
- B. ${}_{94}^{242}\text{Pu}$
- C. ${}_{82}^{207}\text{Pb}$
- D. ${}_{-1}^0\text{e}$

45

The wolf has nearly been eliminated from Illinois ecosystems.

What effect has this had on its prey, the white-tailed deer?

- A. It has had very little impact.
- B. The deer's food supply has grown.
- C. The deer's population has increased.
- D. The deer's major predator is now the gray fox.

44

What is the name of the instrument used to measure wind speed?

- A. Anemometer
- B. Barometer
- C. Calorimeter
- D. Hygrometer

Key for ISBE-Developed Science Sample Items

Item Number	Correct Answer
1	A
2	A
3	D
4	B
5	D
6	B
7	B
8	D
9	A
10	D
11	A
12	B
13	D
14	C
15	B
16	C
17	D
18	B
19	B
20	B
21	B
22	A
23	B

Item Number	Correct Answer
24	B
25	B
26	C
27	B
28	A
29	A
30	B
31	B
32	B
33	C
34	B
35	D
36	D
37	A
38	B
39	A
40	A
41	D
42	C
43	A
44	A
45	C



Preparing for the ACT WorkKeys Assessments



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Some Basic Information

What is ACT WorkKeys®?

The ACT WorkKeys system from ACT is designed to help you develop better workplace skills. Better skills mean better-paying jobs—in any career field.

The ACT WorkKeys system consists of job analysis (finding out which skills are needed on the job), assessments (the tests you'll be taking plus several others), reporting (telling you how your skills match job requirements), and instructional support (guidance to educators related to improving students' skill levels).

Why is ACT WorkKeys important?

In many places throughout the United States, employers find that students are not adequately trained even for entry-level jobs. ACT WorkKeys helps businesses and educators work together to ensure that you leave school prepared for real jobs in the real world.

What types of skills are needed?

ACT WorkKeys measures skills that employers believe are critical to job success—skills such as reading, math, listening, locating information, and teamwork. These skills are valuable for any type of occupation—skilled or professional—and at any level of education.

How does the system work?

ACT WorkKeys helps you figure out how prepared you are for jobs that interest you and guides you to the education and training you need. The system documents your work skills in key areas, giving you an edge with employers when you apply for jobs.

So are these tests designed for only low-level, blue-collar jobs?

Not at all. ACT WorkKeys has analyzed the job skills needed for over 17,000 job titles, ranging from accountant to automotive technician and from welder to webmaster. In fact, the fastest growing types of ACT WorkKeys job profiles are being done for professional, technical, and managerial jobs that require at least a bachelor's degree. The abilities to learn, listen, communicate, work in teams, and solve problems—all areas addressed by ACT WorkKeys—are important assets for any employee, regardless of career choice.

Do higher skills mean higher salaries?

Studies show that jobs requiring higher skills in math, locating information, and reading pay higher entry-level salaries. By increasing your skills while you are still in school, you increase your opportunities for higher salaries both now and in the future.

Why should I care about these tests?

Since ACT WorkKeys tests aren't the college entrance exam that many high school students focus on, some students don't see the purpose in trying to do their best on them. You need to remember, however, that everyone enters the workforce eventually, whether you get a job right out of high school, work part time while continuing your education, or go through extensive postsecondary training. ACT WorkKeys stresses skills development important for every type of employment.

Why do some of the test questions seem irrelevant to my career choice?

Since ACT WorkKeys questions relate to a variety of real-life experiences, the situations sometimes deal with work environments that do not interest particular students. Even very difficult exams, such as the Law School Admission Test or the Graduate Record Examination, routinely contain analytical reasoning questions that feature taxi drivers, executives, carpet sellers, professors, bellhops, architects, and numerous other workers. The basic skills needed to solve a legal question, configure a computer, or schedule employee vacations may be similar for all these tests. And while some ACT WorkKeys test questions can be fairly easy, others are quite difficult—to measure the widest possible range of skills.

Can I study for the tests?

Since ACT WorkKeys measures applied skills, you can't cram to memorize answers for the tests. However, you can use these practice sets to see and work with typical ACT WorkKeys test questions.

What happens to the test results?

You can use your ACT WorkKeys results to get a better picture of jobs you are ready for and to improve areas where your skills are weak. Employers can use the results to determine your qualifications for positions in their organizations. And schools can use the information, along with input from employers, to ensure that their curriculum provides adequate work skills training to meet business needs.

Test Taking Tips

Although there are several different ACT WorkKeys skill areas, you will be taking the *Applied Mathematics* and *Reading for Information* tests as part of the examination. A description of each follows. Both tests contain multiple-choice items followed by five possible answers from which you are to choose the **best** one. The following suggestions apply to both tests.

Pace yourself.

The time limits set for each ACT WorkKeys test give nearly everyone enough time to finish all the questions. However, it is important to pace yourself. Don't spend too much time on one problem or reading section; go on to the other questions and come back if there is time.

Listen to and read the directions for each test carefully.

Before you begin taking one of the ACT WorkKeys tests, pay careful attention to the directions. These tests ask for the **best** answer. It is important to keep this in mind when answering the questions, since it will sometimes be possible to think of responses that would be better than any of those offered or to defend a choice as not entirely wrong. Best-response formats are consistent with the real world, where choosing among less-than-perfect alternatives is routine.

You may want to work out the answer you feel is correct and look for it among the choices given. If your answer is not among the choices provided, reread the question and consider all of the answer choices again to find the best one.

Read each question carefully.

It is important that you understand what each question asks. Some questions will require you to go through several steps to find the best answer, while others can be answered more quickly.

Answer the easy questions first.

The best strategy for taking a test is to answer the easy questions and skip the ones you find difficult. After answering all of the easy questions, go back and try to answer the more difficult ones.

Use logic in more difficult questions.

When you return to the more difficult questions, try to use logic to eliminate incorrect answers to a question. Compare the answer choices to each other and note how they differ. Such differences may provide clues as to what the question requires. Eliminate as many incorrect answers as you can, then make an educated guess from the remaining answers.

Answer every question.

Your score on the ACT WorkKeys tests will be based on the number of questions that you answer correctly; **there is no penalty for guessing**. Thus, you should answer every question within the time allowed for each test, even if you have to guess. The test administrator will announce when there are five minutes remaining on each test.

Review your work.

If there is time left after you have answered every question on a test, go back and check your work on that test. Check to be sure that you marked only one answer to each question. You may not mark answers to a test after time has been called on that test. You may not go back to any other test.

Be precise in marking your answer document.

Be sure that you fill in the correct ovals or circles on your answer document. Check to be sure that the number for the line of ovals or circles on your answer document is the same as the number for the question you are answering. Position your answer document next to your test booklet so you can mark your answers quickly and completely.

Erase completely.

If you want to change an answer on your answer document, be sure to erase the unintended mark completely.

ACT WorkKeys *Applied Mathematics* Assessment

Applied Mathematics is skill in applying mathematical reasoning and problem-solving techniques to work-related problems. Solving mathematical problems in the workplace can differ from solving problems in the classroom. While the math skills needed are the same, math problems in the workplace are not usually laid out neatly in a textbook format. Instead, the employee may be responsible for locating and identifying the necessary information (e.g., on a cash register, price tag, or catalog) and for knowing what to do with that information. It is, therefore, critical to strengthen your core mathematics skills and to develop your problem-solving strategies. Individuals possessing these Applied Mathematics skills will be able to successfully tackle new situations involving mathematics problems in the workplace. Because an employee would have access to a variety of resources for problem solving, a formula sheet that includes all formulas required for the assessment is provided.

There are five levels in the Applied Mathematics skill scale, ranging from Level 3, the least complex, to Level 7, the most complex. These levels were developed based on two main criteria:

- the types of mathematical operations employees must perform, and
- the form and order in which employees receive the information; that is, the presentation of the information.

The skills at the lowest level involve using whole numbers and some decimals in basic math operations: addition, subtraction, multiplication, and division. As the levels progress, the math operations involve more steps. Higher levels include decimals and fractions, conversion of units, averaging, calculating area and volume, and ratios.

As the complexity of the levels increases, the presentation of the information becomes more of a barrier to problem solving. The wording becomes ambiguous, the presence of unnecessary information is more likely, and pertinent information is less obvious. Regardless of skill level, most of these problems will involve one or more of the following applications:

Quantity

Employees often need to determine the number of items sold, produced, or purchased, or to figure totals on a per unit basis.

Money

Working with monetary units is a central part of business and relates to virtually every job, if in no other way than to understand a paycheck. Tasks involving monetary units include figuring sales, costs, wages, and expenses.

Time

Some tasks involve figuring elapsed time. Other problems frequently involve time as it relates to production, sales, costs, distance, and area. In many of these tasks, employees must be familiar with conversion of time units.

Measurement

Calculating distance, area, weight, and volume is crucial to most work situations. Again, employees must be familiar with conversions within and between English and metric measures, as well as the appropriate degree of accuracy needed for different situations.

Proportions and Percentages

Proportions can be used in many tasks that require making predictions (e.g., if this is the amount needed for X units, how much is needed for Y units). Percentages are used in the workplace to calculate commissions, discounts, taxes, price increases, changes in sales, and wage changes.

Averages

Many records in the workplace are expressed in terms of averages (e.g., those involving sales records, wages, costs, hours worked). These averages become tools in the decision-making processes of the business.

Many math problems found in the workplace combine two or more applications: What **quantity** can be produced in a specified **time**? What **distance** can be traveled in a particular **time**? What is the **average** cost in terms of **money**? A common combination of applications is finding the best deal, which requires employees to perform various calculations and then compare the results in terms of relative cost. Examples of typical problems are found in the ACT WorkKeys *Applied Mathematics* Practice Set.

Calculators

Use of Calculators on the ACT WorkKeys *Applied Mathematics* Test

It is your responsibility to bring a permitted calculator. ACT regularly updates information about which calculators are **prohibited** and provides the most current information only via the Web or phone. To be certain your calculator will be permitted on test day, go to www.actstudent.org and enter “calculator” as a keyword search or call **800.498.6481** for the most up-to-date information on permitted and prohibited devices. If you use a prohibited calculator, you will be dismissed and your answer document will not be scored.

You may use a calculator on the ACT WorkKeys *Applied Mathematics* test (but not on any of the other tests). You are **not required** to use a calculator. All the problems can be solved without a calculator. If you regularly use a calculator in your mathematics work, you may wish to use one you are familiar with as you take the *Applied Mathematics* test. Using a more powerful, but unfamiliar, calculator is not likely to give you an advantage over using the kind you normally use. You may use any four-function, scientific, or graphing calculator, unless it has features described in the current list of prohibited devices at www.actstudent.org. Other models may be permitted if you modify some of the calculator’s features, such as removing paper tape, turning off sounds, removing power cords, or covering infrared data ports.

On Test Day

Be sure your calculator is working and has reliable batteries. You may bring a backup calculator and extra batteries to the test center. Testing staff will **not** supply batteries or calculators. You will **not** be allowed to share calculators during testing. Testing staff will check your calculator to verify it is permitted, and they will monitor your use of your calculator to ensure that you:

- use it only during the *Applied Mathematics* test;
- use your backup calculator only after it has been checked by a member of the testing staff;
- do not share your calculator; and
- do not store test materials in your calculator’s memory.

If your calculator has characters one inch high or larger, or a raised display, testing staff may seat you where no other examinee can see your calculator.

Applied Mathematics Characteristics

The chart below describes the five levels of Applied Mathematics. The nature of the problems and the skills required to solve them change at each level.

Paper-and-Pencil/Multiple-Choice Response		45 Minutes, 33 Problems
Level	Characteristics of Problems	Skills
3	<ul style="list-style-type: none"> Information translates easily from verbal setup to a mathematical equation All information provided is necessary to solve the problems and is presented in logical order Units of measurement not involved in actual calculations (i.e., function solely as labels), except dollars and cents 	<ul style="list-style-type: none"> Perform single-step basic operations (addition, subtraction, multiplication, and division) using whole numbers Change a number from one form to another using whole numbers, fractions, decimals, and percentages Add and subtract negative numbers as well as positive numbers
4	<ul style="list-style-type: none"> Information may be presented out of order Problem may include extraneous information Problem may include simple charts or graphs 	<ul style="list-style-type: none"> Solve problems that require one or two operations, such as addition, subtraction, or multiplication on several positive or negative numbers Add commonly known fractions, decimals, or percentages (e.g., $\frac{1}{2}$, .75, 25%), and three fractions that share a common denominator Calculate averages, simple ratios, proportions, and rates, using whole numbers and decimals Multiply a mixed number by a whole number or decimal Put the information in the right order before they perform calculations
5	<ul style="list-style-type: none"> Problems include considerable amount of extraneous information Several steps of logic involved in calculations Mixed unit quantities may need conversion to a single and/or different set of units (e.g., 4 hours and 30 minutes = 4.5 hours) 	<ul style="list-style-type: none"> Perform single-step conversions within and between English and non-English systems of measurement Calculate using mixed units Divide negative numbers Calculate perimeters and areas of basic shapes Calculate percentage discounts and markups Compute the “best deal” using one- and two-step calculations and then comparing costs
6	<ul style="list-style-type: none"> May require considerable translation from verbal form to mathematical expression May require considerable setup and involve multiple-step calculations or conversions May involve transposition of formulas before calculating (e.g., $v = ir \Rightarrow r = v/i$) May involve conversions using two formulas within a system of measurement 	<ul style="list-style-type: none"> Calculate using negative numbers, fractions, ratios, percentages, and mixed numbers Calculate multiple rates and then compare the rates or use them to perform other calculations Find basic areas and volumes of rectangular solids Calculate the “best deal” using the result in another problem Identify and correct errors in calculations Rearrange a formula before solving a problem Look up and use two formulas to convert units within the same system of measurement or between systems of measurement
7	<ul style="list-style-type: none"> Content or format may be unusual Information needed to solve the problem may be implicit and need to be derived from the setup Involve several steps of reasoning and multiple calculations May include nonlinear functions (e.g., rates of change), and applications of basic statistical concepts (e.g., error of measurement) 	<ul style="list-style-type: none"> Solve problems involving more than one unknown Calculate the percent of change Calculate multiple areas of volumes of spheres, cylinders, and cones Set up and manipulate complex ratios and proportions Find the best economic value of several alternatives Find mistakes in Level 6 problems Convert between systems of measurement that involve fractions, mixed numbers, decimals, and/or percentages

ACT WorkKeys *Applied Mathematics* Practice Set

This practice set can help you understand the ACT WorkKeys Applied Mathematics skill levels and give you practice for the actual ACT WorkKeys assessment. However, remember that this practice set is **not** a full-length test and your score is **not** a substitute for the actual ACT WorkKeys test score. The actual test consists of 33 problems and has a time limit of 45 minutes.

The ACT WorkKeys *Applied Mathematics* assessment measures skill in applying mathematical reasoning to work-related problems. The test involves setting up and solving the types of problems and doing the types of calculations that actually occur in the workplace. It is designed to be taken with a calculator and a formula sheet, as both would be available on the job. There are five skill levels, ranging from Level 3 to Level 7. As you move from Level 3 to Level 7, the mathematical concepts and calculations become more complex.

APPLIED MATHEMATICS FORMULA SHEET

Distance

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet
1 mile \approx 1.61 kilometers
1 inch = 2.54 centimeters
1 foot = 0.3048 meters
1 meter = 1,000 millimeters
1 meter = 100 centimeters
1 kilometer = 1,000 meters
1 kilometer \approx 0.62 miles

Area

1 square foot = 144 square inches
1 square yard = 9 square feet
1 acre = 43,560 square feet

Volume

1 cup = 8 fluid ounces
1 quart = 4 cups
1 gallon = 4 quarts
1 gallon = 231 cubic inches
1 liter \approx 0.264 gallons
1 cubic foot = 1,728 cubic inches
1 cubic yard = 27 cubic feet
1 board foot = 1 inch by 12 inches by 12 inches

Weight/Mass

1 ounce \approx 28.350 grams
1 pound = 16 ounces
1 pound \approx 453.592 grams
1 milligram = 0.001 grams
1 kilogram = 1,000 grams
1 kilogram \approx 2.2 pounds
1 ton = 2,000 pounds

Rectangle

perimeter = $2(\text{length} + \text{width})$
area = $\text{length} \times \text{width}$

Rectangular Solid (Box)

volume = $\text{length} \times \text{width} \times \text{height}$

Cube

volume = $(\text{length of side})^3$

Triangle

sum of angles = 180°
area = $\frac{1}{2}(\text{base} \times \text{height})$

Circle

number of degrees in a circle = 360°
circumference $\approx 3.14 \times \text{diameter}$
area $\approx 3.14 \times (\text{radius})^2$

Cylinder

volume $\approx 3.14 \times (\text{radius})^2 \times \text{height}$

Cone

volume $\approx \frac{3.14 \times (\text{radius})^2 \times \text{height}}{3}$

Sphere (Ball)

volume $\approx \frac{4}{3} \times 3.14 \times (\text{radius})^3$

Electricity

1 kilowatt-hour = 1,000 watt-hours
amps = watts \div volts

Temperature

$^\circ\text{C} = 0.56(^\circ\text{F} - 32)$ or $\frac{5}{9}(^\circ\text{F} - 32)$
 $^\circ\text{F} = 1.8(^\circ\text{C}) + 32$ or $\frac{9}{5}(^\circ\text{C}) + 32$

NOTE: Problems on the WorkKeys *Applied Mathematics* assessment should be worked using the formulas and conversions on this formula sheet.

Applied Mathematics Level 3

Individuals with Level 3 skills can set up and solve problems with a single type of mathematical operation (addition, subtraction, multiplication, or division) on whole numbers, fractions, decimals, or percentages.

1. You work at a frozen-goods warehouse. One of the walk-in freezers is set at -12°C , but it needs to be at -21°C . How many degrees colder does the freezer need to be?
 - A. 9°C
 - B. 11°C
 - C. 18°C
 - D. 21°C
 - E. 33°C

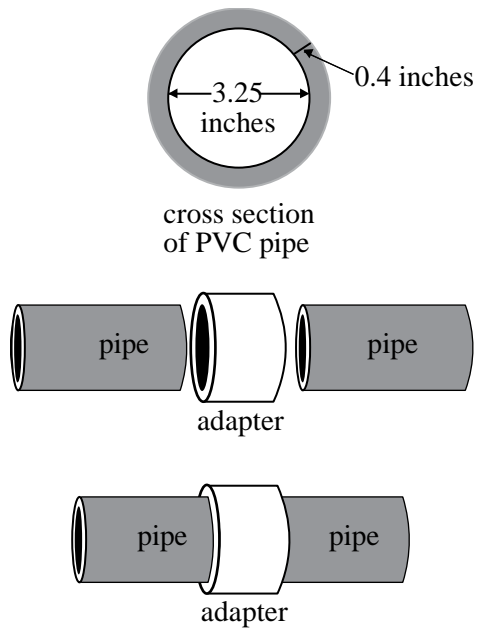
2. Your company safety officer has asked you to track the percent of your time at work that you spend standing. You estimate that you stood $\frac{1}{5}$ of the time today. What percent should you record?
 - A. 2%
 - B. 5%
 - C. 15%
 - D. 20%
 - E. 50%

3. You need to set up some shirt displays in the clothing store where you work. You have 15 shirts that you want to distribute evenly among 3 displays. How many shirts should you put in each display?
 - A. 3
 - B. 5
 - C. 12
 - D. 15
 - E. 18

Applied Mathematics Level 4

Individuals with Level 4 skills can set up and solve problems with one or two different mathematical operations (addition, subtraction, multiplication, or division) on whole numbers, fractions, decimals, or percentages.

1. PVC pipe sections are connected with an adapter, as shown. You need to connect 2 PVC pipes that have inside diameters of 3.25 inches and 0.4-inch thick walls. What inside diameter, in inches, must the adapter have to fit tightly over the pipes?



- A. 1.30
 - B. 2.45
 - C. 2.85
 - D. 3.65
 - E. 4.05
2. One of your employees was out of the office today from 2:25 P.M. to 4:10 P.M. for personal reasons. How many hours should be recorded as personal time?
 - A. 1.45
 - B. 1.75
 - C. 2.15
 - D. 2.25
 - E. 2.45

3. Your dispatcher charges \$1.80 per ton-mile for rough sand. If you are hauling 8 tons of rough sand to a lot 2 miles from the stockpile, how much is the charge?
- A. \$11.80
 - B. \$14.40
 - C. \$18.00
 - D. \$19.60
 - E. \$28.80

Applied Mathematics Level 5

Individuals with Level 5 skills can set up and solve problems with several steps of logic and calculation involving a mixture of whole numbers, fractions, decimals, or percentages.

1. At the factory where you work, you spend about 3 out of every 21 workdays performing quality checks as needed. Approximately what percent of your time do you spend on quality checks?
 - A. 0.07%
 - B. 0.14%
 - C. 1.4%
 - D. 7.0%
 - E. 14%

2. For a rainwater study, you are collecting runoff in a pipe that has an outside diameter of 9.25 centimeters. You need to insert the end of the pipe into a tank that already has an opening with a diameter of 5.75 centimeters. You want a guide to show how much you need to grind away around the opening so that the pipe will fit. How many centimeters do you need to measure from the edge of the existing opening?
 - A. 1.75
 - B. 2.95
 - C. 3.50
 - D. 6.38
 - E. 7.50

3. As an electrician, you must determine how much current will flow through a circuit with a voltage of 120 volts across 16 fluorescent bulbs that are rated at 26 watts each. About how much current, in amps, will flow through the bulbs?
 - A. 0.2
 - B. 0.3
 - C. 3.5
 - D. 4.6
 - E. 7.5

Applied Mathematics Level 6

Individuals with Level 6 skills can set up and solve problems containing unnecessary information and requiring multiple steps. Calculations involve a mixture of whole numbers, fractions, decimals, or percentages.

1. You are a manager at a storage company. A customer wants to rent the smallest storage unit possible for the following boxes: 52 boxes that measure $1\frac{1}{2}$ feet by 1 foot by 6 inches, 36 boxes that measure 2 feet by 2 feet by 2 feet, and 64 boxes that measure 9 inches by 6 inches by 3 inches. What is the total volume of the boxes, in cubic feet?
 - A. 333
 - B. 468
 - C. 1,810
 - D. 11,124
 - E. 67,392

2. You work in a circuit-board lab. You need to make up an 85-gallon bath that should be 1 percent sulfuric acid. How many liters of sulfuric acid will you need for the bath?
 - A. 0.2
 - B. 0.9
 - C. 2.2
 - D. 3.2
 - E. 8.5

3. On a construction project you estimate a total of 250 hours of labor. Ten percent of this time is for your work. The cost of your labor is \$31.00 per hour. The rest of the labor time is divided equally between your 4 assistants. The two assistants at level A earn \$19.00 per hour and the two at level B earn \$15.00 per hour. What is the total estimate for labor cost?
 - A. \$1,943.75
 - B. \$3,050.00
 - C. \$4,600.00
 - D. \$5,025.00
 - E. \$5,450.00

Applied Mathematics Level 7

Individuals with Level 7 skills can set up and solve complex problems requiring extensive calculations. They can calculate rate of change, set up and manipulate complex ratios and proportions, find multiple areas or volumes of two- and three-dimensional shapes, find the best economic value of several alternatives, and locate errors in multiple-step calculations.

1. You are a caterer preparing a casserole at a corporate retreat center. You have mixed all of the ingredients and now have 2 stock pots, each containing 12 quarts of a mixture that needs to be transferred into 10-inch-by-15-inch-by-2-inch baking pans. How many pans will you need to bake all of the mixture?
 - A. 2
 - B. 3
 - C. 4
 - D. 5
 - E. 10

2. At the furniture store you manage, your cost for a leather sofa is \$762. You are selling it for \$1,905. What is the percent markup on the sofa?
 - A. 15%
 - B. 40%
 - C. 60%
 - D. 150%
 - E. 250%

3. You work in an auto supply store, and you need to order a particular automobile part. One supplier sells the part for \$112 per 4 parts. Another supplier sells the same part for \$285 per 12 parts. Between these 2 suppliers, how much money would you save on an order of 36 parts using the less expensive supplier?
 - A. \$ 4.25
 - B. \$ 51.00
 - C. \$153.00
 - D. \$221.00
 - E. \$855.00

An Important Consideration about the Answers to the Practice Sets

Some ACT WorkKeys questions have a response choice (the “key”) that can be clearly defined as right or correct and other response choices (the “distractors” or “foils”) that can be identified as wrong or incorrect. Many ACT WorkKeys questions, however, are in a best-response format: the keyed response is simply the best of those available. It is important to keep this in mind when discussing such questions, since it will sometimes be possible to think of responses that would be better than any of those offered, or to defend a distractor as not entirely wrong. Best-response formats are consistent with the real world, where choices among less-than-perfect alternatives are routinely the case.

Note: The solutions shown indicate one or two ways to solve each problem. There may be other, equally valid methods of solving the problems.

Answers to Applied Mathematics Level 3 Practice Set

Answer to Level 3 Sample Item 1:

- A. Correct.** $|(-12^{\circ}\text{C} - (-21^{\circ}\text{C}))| = |(-12 + 21)| = 9^{\circ}\text{C}$ colder. Find the absolute value of the difference between the two degrees.
- B. Incorrect.** $-11 - (-22) = -11 + 22 = 11^{\circ}\text{C}$ (switched ones digits)
- C. Incorrect.** $-21 \div -12 = 1.75 \rightarrow 17.5 \rightarrow 18^{\circ}\text{C}$ (divided, shifted decimal, and rounded up)
- D. Incorrect.** 21°C (used the desired temperature setting)
- E. Incorrect.** $-12 - (-21) = -12 - 21 = -33^{\circ}\text{C} \rightarrow 33^{\circ}\text{C}$ (subtracted incorrectly OR added temperatures (without negatives))

Answer to Level 3 Sample Item 2:

- A. Incorrect:** $(1 \div 5) \times 10 = 2$ (multiplied by 10 instead of 100)
- B. Incorrect:** $5 \div 1 = 5$ (divided 5 by 1 instead of 1 by 5 and did not multiply by 100)
- C. Incorrect:** 15 (wrote 15 because the fraction has the numbers 1 and 5)
- D. Correct:** $(1 \div 5) \times 100 = 0.2 \times 100 = 20\%$. Convert the fraction to a decimal by dividing the numerator by the denominator, then multiply by 100 to convert to a percent.
- E. Incorrect:** $(5 \div 1) \times 10 = 50$ (divided 5 by 1 instead of 1 by 5 and multiplied by 10 instead of 100)

Answer to Level 3 Sample Item 3:

- A. Incorrect:** $15 \div 5 = 3$ (took the number from the problem or made a division mistake by dividing 15 by the correct answer)
- B. Correct:** $15 \text{ shirts} \div 3 \text{ displays} = 5 \text{ shirts/display}$. Divide the number of shirts by the number of displays.
- C. Incorrect:** $15 - 3 = 12$ (subtracted instead of dividing)
- D. Incorrect:** 15 (took the number from the problem)
- E. Incorrect:** $15 + 3 = 18$ (added instead of dividing)

Answers to Applied Mathematics Level 4 Practice Set

Answer to Level 4 Sample Item 1:

- A. Incorrect: $3.25 \times 0.4 = 1.30$ (multiplied the inside diameter by the wall thickness)
- B. Incorrect: $3.25 - (2 \times 0.4) = 2.45$ (subtracted two times the wall thickness)
- C. Incorrect: $3.25 - 0.4 = 2.85$ (subtracted one wall thickness)
- D. Incorrect: $3.25 + 0.4 = 3.65$ (added only one wall thickness)
- E. **Correct:** $3.25 \text{ inches} + (2 \times 0.4 \text{ inches}) = 4.05 \text{ inches}$. Add the inside diameter and the 2 wall thicknesses to get the necessary inside diameter of the adapter.

Answer to Level 4 Sample Item 2:

- A. Incorrect: $4:10 - 2:25 = (3 - 2) + (70 - 25) = 1:45 \rightarrow 1.45$ (did not convert minutes to the decimal equivalent)
- B. **Correct:** $4:10 - 2:25 = (3 - 2) \text{ hours} + (70 - 25) \text{ minutes} = 1 \text{ hour} + (45 \text{ minutes} \div 60 \text{ minutes/hour}) = (1 + 0.75) \text{ hours} = 1.75 \text{ hours}$. Subtract the earlier time from the later time, borrowing correctly.
- C. Incorrect: $4:10 - 2:25 \rightarrow 4 - 2$ and $25 - 10 = 2:15 \rightarrow 2.15$ (subtracted the bigger number from the smaller number in hours and minutes and did not convert the minutes to the decimal equivalent)
- D. Incorrect: $4:10 - 2:25 \rightarrow 4 - 2$ and $25 - 10 = 2:15 = 2.25$ (subtracted the bigger number from the smaller number in hours and minutes, but correctly converted the minutes to the decimal equivalent)
- E. Incorrect: $4:10 - 2:25 \rightarrow 4 - 2$ and $0:10 - 0:25 \rightarrow 2:45 \rightarrow 2.45$ (did not borrow from the hours column when subtracting and did not convert the minutes to the decimal equivalent)

Answer to Level 4 Sample Item 3:

- A. Incorrect. $1.80 + 8 + 2 = 11.80$; Simply added the three given numbers.
- B. Incorrect. $1.80 \times 8 = \$14.40$; Forgot the mileage factor.
- C. Incorrect. $1.80 \times (8 + 2) = 18.00$; Added the tonnage and mileage factors, then multiplied by the price factor.
- D. Incorrect. $(1.80 + 8) \times 2 = 19.60$; Added the price and the tonnage factor, then multiplied by the mileage factor.
- E. **Correct.** $\$1.80/\text{ton-mile} \times 8 \text{ tons} \times 2 \text{ miles} = \28.80 . Multiply the ton-mile charge, number of tons, and the number of miles.

Answers to Applied Mathematics Level 5 Practice Set

Answer to Level 5 Sample Item 1:

- A. Incorrect: $(21 \div 3) \div 100 = 0.07$ (reversed the numerator and denominator and divided by 100 instead of multiplying)
- B. Incorrect: $3 \div 21 = 0.14$ (divided 3 days by 21 days but did not convert the decimal to a percent)
- C. Incorrect: $(3 \div 21) \times 100 \rightarrow 1.4$ (correctly set up the equation but incorrectly placed the decimal point)
- D. Incorrect: $21 \div 3 = 7$ (the numerator and denominator were reversed and the result was mistaken for a percent)
- E. **Correct:** $(3 \text{ days} \div 21 \text{ days total}) \times 100 = 14.3\%$, rounded to 14%. Divide the days performing quality checks by the total workdays and multiply by 100 to obtain the percent.

Answer to Level 5 Sample Item 2:

- A. **Correct:** $(9.25 \text{ cm} - 5.75 \text{ cm}) \div 2 = 3.50 \text{ cm} \div 2 = 1.75 \text{ cm}$. Find the difference between the diameters of the pipe and tank opening and divide by 2.
- B. Incorrect: $9.25 \div 3.14 = 2.95$ (divided pipe diameter by pi)
- C. Incorrect: $9.25 - 5.75 = 3.50$ (subtracted diameters, didn't divide in half)
- D. Incorrect: $9.25 - 5.75 \div 2 = 9.25 - (5.75 \div 2) = 9.25 - 2.875 = 6.375$ rounded to 6.38 (neglected use of parentheses)
- E. Incorrect: $(9.25 + 5.75) \div 2 = 15.00 \div 2 = 7.5$ (added instead of subtracting diameters)

Answer to Level 5 Sample Item 3:

- A. Incorrect: $26 \div 120 = 0.22$, rounded to 0.2 (found the current for only one bulb)
- B. Incorrect: $120 \div (26 \times 16) = 120 \div 416 = 0.29$, rounded to 0.3 (divided the volts by the total watts instead of the total watts by the volts)
- C. **Correct:** $(26 \text{ watts/bulb} \times 16 \text{ bulbs}) \div 120 \text{ volts} = 416 \text{ watts} \div 120 \text{ volts} = 3.47$, rounded to 3.5 amps. Multiply the bulb's wattage by the number of bulbs and divide by the voltage.
- D. Incorrect: $120 \div 26 = 4.62$, rounded to 4.6 (divided the volts by the watts in one bulb instead of the total watts by the volts)
- E. Incorrect: $120 \div 16 = 7.5$ (divided the volts by the number of bulbs instead of dividing the total watts by the volts)

Answers to Applied Mathematics Level 6 Practice Set

Answer to Level 6 Sample Item 1:

- A. **Correct:** $[52 \text{ boxes} \times (1.5 \text{ feet} \times 1 \text{ foot} \times 0.5 \text{ feet})] + [36 \text{ boxes} \times (2 \text{ feet} \times 2 \text{ feet} \times 2 \text{ feet})] + [64 \text{ boxes} \times (0.75 \text{ feet} \times 0.5 \text{ feet} \times 0.25 \text{ feet})] = 39 \text{ cubic feet} + 288 \text{ cubic feet} + 6 \text{ cubic feet} = 333 \text{ cubic feet}$. Convert inches to feet, then find the area of each box size in cubic feet. Multiply the area of the box by the number of boxes of that size, then add the results.
- B. Incorrect: $[(52 \times (1.5 + 1 + 0.5))] + [36 \times (2 + 2 + 2)] + [(64 \times (0.75 + 0.5 + 0.25))] = 156 + 216 + 96 = 468$ (added the box dimensions instead of multiplying)
- C. Incorrect: $[(52 \times (1.5 + 1 + 6))] + [36 \times (2 + 2 + 2)] + [(64 \times (9 + 6 + 3))] = 442 + 216 + 1,152 = 1,810$ (did not convert inches to feet and added box dimensions instead of multiplying)
- D. Incorrect: $[52 \times (1.5 \times 1 \times 6)] + [36 \times (2 \times 2 \times 2)] + [64 \times (9 \times 6 \times 3)] = 468 + 288 + 10,368 = 11,124$ (did not convert inches to feet)
- E. Incorrect: $[52 \times (1.5 \times 1 \times 0.5)] \times [36 \times (2 \times 2 \times 2)] \times [64 \times (0.75 \times 0.5 \times 0.25)] = 39 \times 288 \times 6 = 67,392$ (multiplied the volumes of each box size instead of adding them)

Answer to Level 6 Sample Item 2:

- A. Incorrect: $85 \times 0.01 \times 0.264 = 0.224$, rounded to 0.2 (reversed conversion factor for gallons to liters)
- B. Incorrect: $85 \times 0.01 = 0.85$, rounded to 0.9 (did not convert from gallons to liters)
- C. Incorrect: $85 \times 0.1 \times 0.264 = 2.244$, rounded to 2.2 (multiplied the number of gallons in the bath by 10% instead of 1%, and reversed the conversion factor for gallons to liters)
- D. **Correct:** $1\% \text{ acid/bath} = 0.01 \text{ gallons acid/gallon bath}$; $85 \text{ gallons bath} \times 0.01 \text{ gallons acid/gallon bath} \div 0.264 \text{ gallons/liter} = 3.2 \text{ liters acid}$. Multiply the number of gallons in the bath by the percent of sulfuric acid needed in the bath to find the number of gallons of acid needed, then convert from gallons to liters.
- E. Incorrect: $85 \times 0.1 = 8.5$ (multiplied the number of gallons in the bath by 10% instead of 1%, and did not convert from gallons to liters)

Answer to Level 6 Sample Item 3:

- A. Incorrect: $250 + (250 \times .10) = 275$; $275 \div 4 = 68.75$; $(68.75 \div 2 \times 19) + (68.75 \div 2 \times 15) = \$1,168.75$; $25 \times 31 = \$775$; $\$1,168.75 + \$775 = \$1,943.75$. (added 10% of the total hours given to the total hours given, divided total by 4, then divided each fourth in half and multiplied by pay rate to calculate workers' pay, then added your pay)
- B. Incorrect: $250 - (250 \times .10) = 225$; $225 \div 4 = 56.25$; $(56.25 \times 2 \times 19) + (56.25 \times 2 \times 15) = \$3,825$; $25 \times 31 = \$775$; $\$3,825 - \$775 = \$3,050.00$. (subtracted your pay from the total of the other workers)
- C. **Correct:** $250 \text{ hours} \times .10\% = 25 \text{ hours}$; $250 \text{ hours} - 25 \text{ hours} = 225 \text{ hours}$; $225 \text{ hours} \div 4 \text{ workers} = 56.25 \text{ hours/worker}$; $(56.25 \text{ hours/worker} \times 2 \text{ workers} \times \$19/\text{hour}) + (56.25 \text{ hours/worker} \times 2 \text{ workers} \times \$15/\text{hour}) = \$3,825$; $25 \text{ hours} \times \$31/\text{hour} = \$775$; $\$3,825 + \$775 = \$4,600.00$.
- D. Incorrect: $250 \div 4 = 62.50$; $(62.50 \times 2 \times 19) + (62.50 \times 2 \times 15) = \$4,250$; $25 \times 31 = \$775$; $\$4,250 + \$775 = \$5,025.00$. (divided total hours by 4, calculated pay, then calculated your pay for 10% more hours)
- E. Incorrect: $250 + (250 \times .10) = 275$; $275 \div 4 = 68.75$; $(68.75 \times 2 \times 19) + (68.75 \times 2 \times 15) = \$4,675$; $25 \times 31 = \$775$; $\$4,675 + \$775 = \$5,450.00$. (added 10% of the total hours given to the total hours given, divided total hours by 4, calculated pay for other workers, then calculated your pay and added that to the total of the other workers)

Answers to Applied Mathematics Level 7 Practice Set

Answer to Level 7 Sample Item 1:

- A. Incorrect. 2 (did not do the conversion or the volume calculation; chose the number of stock pots)
- B. Incorrect. $12 \div 4 \times 231 = 693$; $10 \times 15 \times 2 = 300$; $693 \div 300 = 2.31$, rounded up to 3 (forgot to multiply by the number of stock pots)
- C. Incorrect. $2 \times 12 \times 1/4 \times 231 = 1,386$; $10 \times 15 \times 2 = 300$; $1,386 \div 300 = 4.62$, rounded to 4 (rounded down instead of rounding up to accommodate the remainder)
- D. **Correct.** $2 \times 12 \text{ qt} \times (1 \text{ gal}/4 \text{ qt}) \times (231 \text{ cu in}/1 \text{ gal}) = 1,386 \text{ cu in}$; $10 \text{ in} \times 15 \text{ in} \times 2 \text{ in} = 300 \text{ cu in/pan}$; $1,386 \text{ cu in} \div 300 \text{ cu in/pan} = 4.62$, rounded to 5 pans. Find the volume of the two stock pots (mixture), the volume of the baking pans, and divide the stockpot value by the baking pan value; round up to the nearest whole number.
- E. Incorrect. $12 \times 231 = 2,772$; $10 \times 15 \times 2 = 300$; $2,772 \div 300 = 9.24$, rounded to 10 (forgot to convert quarts to gallons and used only 1 stock pot)

Answer to Level 7 Sample Item 2:

- A. Incorrect: $(1,905 - 762) \div 762 = 1.5 \rightarrow 15$ (correctly calculated percent markup but misplaced the decimal)
- B. Incorrect: $(1,905 - 762) \div 1,905 = 0.6 \times 100 = 60$; $100 - 60 = 40$ (divided the markup by the wrong price and subtracted the resulting percent from 100%)
- C. Incorrect: $(1,905 - 762) \div 1,905 = 0.6 \times 100 = 60$ (divided the markup by the wrong price)
- D. **Correct:** $(\$1,905 - \$762) \div \$762 = 1.5 \times 100 = 150\%$. Divide the difference between the selling price and the cost by the cost and convert to a percent by multiplying by 100.
- E. Incorrect: $1,905 \div 762 = 2.5 \times 100 = 250$ (divided the selling price by the cost and converted to a percent)

Answer to Level 7 Sample Item 3:

- A. Incorrect: $112 \div 4 = 28$; $285 \div 12 = 23.75$; $28 - 23.75 = 4.25$ (calculated the savings on 1 part, not 36 parts)
- B. Incorrect: $112 \div 4 = 28$; $285 \div 12 = 23.75$; $28 - 23.75 = 4.25$; $4.25 \times 12 = 51$ (calculated the savings on 12 parts, not 36 parts)
- C. **Correct:** $\$112 \div 4 \text{ parts} = \$28/\text{part}$; $\$285 \div 12 \text{ parts} = \$23.75/\text{part}$; $\$28 - \$23.75 = \$4.25$; $\$4.25 \times 36 \text{ parts} = \153.00 . Calculate the cost per part from both suppliers and find the difference, then multiply by the number of parts needed to find the amount saved.
- D. Incorrect: $112 \div 4 = 28$; $285 \div 12 = 23.75$; $28 - 23.75 = 4.25$; $4.25 \times (4 + 12 + 36) = 221$ (added all 3 numbers of parts mentioned and calculated the savings on that total)
- E. Incorrect: $285 \div 12 = 23.75$; $23.75 \times 36 = 855$ (calculated the cost of 36 parts at the lower rate)

ACT WorkKeys *Reading for Information Assessment*

Reading for Information is skill in reading and understanding work-related instructions and policies. Such material, known as *procedural* text, differs from the explanatory and narrative text on which most reading programs are based. In addition, unlike reading and content-area texts, which are usually organized to make the reading easy to understand, workplace communication is not necessarily designed to be easy to read. It may even be poorly or unclearly written. These differences can affect the skills employees need when they encounter job-related reading tasks. Reading for Information skills included can be loosely grouped into the following four categories:

Choosing Main Ideas or Details

This skill requires selecting the important information and supporting details from a written document. Looking for main ideas and details is a common reading task. But, as mentioned previously, reading texts encountered in the workplace differ from the selections most often used in reading programs. In such programs, the main idea is generally found in the topic sentence at the beginning of a paragraph or occasionally in a concluding sentence. However, written communication found in the workplace is often not constructed in such an organized manner. Consequently, the employee needs to be able to use clues other than placement to identify the main ideas and important details.

Understanding Word Meanings

Although some basic vocabulary is involved in this skill area, the emphasis is on using context to determine specific word meanings. The demands of the workplace progress from the need to know simple words and identify definitions clearly stated in the reading to the need to use the context to determine the meanings of more difficult words. Jargon, technical terminology, and words with multiple meanings are used increasingly as the contexts become more complex.

Applying Instructions

Conveying instructions is the principal purpose of a great deal of workplace communication. Skill in applying instructions involves sequencing and generalizing. As in the other skill areas, the workplace requirements range from the simple to the more complex. As the levels increase, the instructions contain more steps and conditionals are added. At the lower levels, employees need only apply instructions to clearly described situations; at the higher levels, employees must apply instructions to less similar and, eventually, to new situations.

Applying Information and Reasoning

Often, for effective performance of a task, it is necessary for employees to apply information given in workplace communications to similar or new situations, to predict consequences of certain actions, and to understand the reasoning, which may or may not be stated, behind a policy. As in the previous category, employees may be asked to apply information and reasoning to clearly described situations at the lower levels, while, at higher levels, they must apply information and reasoning to similar and then to new situations.

Reading for Information Characteristics

The chart below describes the five levels of the Reading for Information skill. Both the nature of the documents and the tasks using the documents change at each level.

Paper-and-Pencil/Multiple-Choice Response		45 Minutes, 33 Problems
Level	Characteristics of Reading Materials and Questions	Skills
3	<ul style="list-style-type: none"> Short, uncomplicated passages which use elementary vocabulary Basic company policies, procedures, and announcements All necessary information stated clearly in the reading materials Wording of the questions and answers similar or identical to the wording used in the reading materials 	<ul style="list-style-type: none"> Pick out the main ideas and clearly stated details Choose the correct meaning of a word that is clearly defined in the reading Choose the correct meaning of common everyday and workplace words Choose when to perform a step in a series of steps Apply instructions to a situation that is the same as the one in the reading materials
4	<ul style="list-style-type: none"> Straightforward but longer sentences than at Level 3 More detail and greater number of steps in described procedures Described policies and procedures include changing conditions that affect the best action Common words but some harder words also Questions and answers paraphrased from the passage 	<ul style="list-style-type: none"> Identify important details that may not be clearly stated Use the reading material to figure out the meaning of words that are not defined Apply instructions with several steps to a situation that is the same as the situation in the reading materials Choose what to do when changing conditions call for a different action
5	<ul style="list-style-type: none"> More details, greater complexity, and broader topics than those at Level 4 Specialized words and phrases (e.g., jargon and technical terms), and some words with multiple meanings Application of information given in the passage to a situation that is not specifically described in the passage Several considerations to be taken into account in order to choose the correct responses 	<ul style="list-style-type: none"> Figure out the correct meaning of a word based on how the word is used Identify the correct meaning of an acronym that is defined in the document Identify the paraphrased definition of a technical term or jargon that is defined in the document Apply technical terms and jargon and relate them to stated situations Apply straightforward instructions to a new situation that is similar to the one described in the material Apply complex instructions that include conditionals to situations described in the materials
6	<ul style="list-style-type: none"> More complex presentation of information Excerpts from regulatory and legal documents More elaborate procedures and concepts described Advanced vocabulary, jargon, and technical terms Most necessary information not clearly stated in the passages 	<ul style="list-style-type: none"> Identify implied details Use technical terms and jargon in new situations Figure out the less common meaning of a word based on the context Apply complicated instructions to new situations Figure out the principles behind policies, rules, and procedures Apply general principles from the materials to similar and new situations Explain the rationale behind a procedure, policy, or communication
7	<ul style="list-style-type: none"> More difficult passages Denser information Complex concepts Difficult vocabulary Jargon and technical terms whose definitions must be derived from context Lacks clarity and direction 	<ul style="list-style-type: none"> Figure out the definitions of difficult, uncommon words based on how they are used Figure out the meaning of jargon or technical terms based on how they are used Figure out the general principles behind the policies and apply them to situations that are quite different from any described in the materials

ACT WorkKeys *Reading for Information* Practice Set

This practice set gives examples of the reading materials and questions on the ACT WorkKeys *Reading for Information* assessment. It can help you understand the ACT WorkKeys skill levels and give you practice for the actual ACT WorkKeys assessment. However, remember that this practice set is **not** a full-length test and your score is **not** a substitute for the actual ACT WorkKeys test score. The actual test consists of 33 questions and has a time limit of 45 minutes. Several questions may be grouped together and relate to a single piece of reading material.

ACT WorkKeys Reading for Information is the skill people use when they read and use written text in order to do a job. The written texts include memos, letters, directions, signs, notices, bulletins, policies, and regulations. It is often the case that workplace communications are not necessarily well-written or targeted to the appropriate audience. Reading for Information materials do not include information that is presented graphically, such as in charts, forms, or blueprints. There are five skill levels, from Level 3 to Level 7. As you move from Level 3 to Level 7, both the materials and the tasks become more complex.

Reading for Information Level 3

Individuals with Level 3 skills understand basic words and can identify main ideas. They understand how and when to follow each step in a set of instructions and can use the instructions in situations that are the same as the one they are reading about. Level 3 materials include simple instructions, company policies, and announcements. They are short and straightforward, and contain basic vocabulary.

Safety Training

Types of Eye & Face Protection

Safety Glasses – impact-resistant lenses with side shields. Least amount of protection.

Goggles – protect from impact, dust, and splashes. Use indirect vented or non-vented type for splash hazards.

Face Shields – not for eye protection. Use for face protection from chemicals or when grinding or chipping. Other eye protection is required.

Welding Shields – fitted with filtered lenses. Protects face & eyes from burns when welding, brazing, soldering, and cutting.

Adapted from: SafetyInfo.com. Retrieved May 16, 2008, from <http://www.safetyinfo.com/guests/OHEyeProtectionTypes.pdf>.

1. You are a metal grinder for Brown Metallics, Inc. According to the information shown, the best face protection for grinding is a:
 - A. face shield.
 - B. filtered lens.
 - C. pair of goggles.
 - D. pair of safety glasses.
 - E. welding shield.
-

City Hall Evacuation Procedure

As the floor monitor for your area, you are responsible for ensuring that all persons in your area are accounted for. When the alarm goes off, first check each employee's space to make sure they leave the building. Then check conference rooms and restrooms for visitors. Note the name of anyone who does not leave. Go out the main door of the building. If you are not on the ground floor, tell everyone to take the stairs to the ground floor and go out the main door. **DO NOT USE ELEVATORS.** If anyone needs help, call x4144 and the fire department will come.

All employees should gather at the northeast corner of the parking lot across Orange Avenue so that everyone will be accounted for. Wait until the fire department gives the all-clear signal before re-entering the building.

2. You are the floor monitor for your area. According to the procedure shown, the reason all employees should gather at the northeast corner of the parking lot is so that:
 - A. employees can leave the area in their cars.
 - B. the fire department can get in.
 - C. they can re-enter the building easily.
 - D. they can hear the all-clear signal.
 - E. you can account for everyone.

 3. You are the floor monitor for your area. According to the procedure shown, when you hear the alarm, the first thing you should do is:
 - A. call x4144 to get help.
 - B. check each employee's space.
 - C. check the conference rooms for visitors.
 - D. exit the building through the main door.
 - E. take the stairs to the ground floor.
-

Reading for Information Level 4

Individuals with Level 4 skills can apply instructions to situations that are the same as the situations in the reading materials. They can identify cause-effect relationships and understand words that are not defined for them, based on the context. Level 4 materials may include several details or describe processes involving several steps.

An Ounce of Prevention

To make Gracie Industries more secure and prevent future virus outbreaks, IT will install the capability for your computer to upgrade critical patches automatically.

Phase 1 updates the system setting on your PC. If you have a message showing that changes have been made to your system, you should restart your PC.

Phase 2 downloads and installs critical patches to your system.

- If your PC does not have the most current patches, you will see a flashing icon in the lower right corner of your screen. Click that icon. Then click on the Install Now button. When it's finished, restart your PC.
- If your PC has the most current patches, you will not be asked to install or reboot your PC.

If you get an error message during either of these two phases, send an e-mail to technical support informing them what the error message is and when it occurred in this process.

After the patches have been applied, if you keep getting a pop-up window saying that your PC will automatically reboot, send an e-mail to technical support.

1. You work at Gracie Industries. According to the notice shown, if your PC continues to show a message saying it will reboot automatically, you should:
 - A. check that your patches are up to date.
 - B. click the Install Now button.
 - C. restart your PC.
 - D. send a message to technical support.
 - E. update the system setting.

Elm Street Elementary School

Memo

To: Elm Street Elementary School Staff
From: Principal Wesley Johnston
Subject: General Parking Safety

Starting Monday, April 2, the gate closest to the Kindergarten classrooms on Elm Street will be locked at 8:30 A.M. Any students arriving after this time must use the gate adjacent to room #1. This will also be the gate where the students will be dismissed.

Also, cars may only be left in lawful parking spaces. The side parking lot at the school and the parking lot behind the cafeteria are for staff parking only. Parents may not park in staff designated parking spots. Spaces in front of the building are designated for visitor parking. Cars should not be left unattended in the driveway at any time, for any reason.

No parking is allowed along the red curbs. The yellow curb is for drop off and pick up only. Parents should pull forward in the driveway as far as possible to allow as many cars as possible. Always have students walk toward the cafeteria to be picked up. Parents and caregivers may also park on Elm Street or in the Rose Park parking lot and meet students at a designated area.

2. You are a teacher at Elm Street Elementary School. According to the memo shown, after April 2, where should you dismiss your students?
- A. At a personally designated area on campus
 - B. At the gate adjacent to room #1
 - C. At the gate on Elm Street
 - D. By the yellow curb next to the cafeteria
 - E. Through the gate closest to the Kindergarten classrooms
3. You are an Elm Street Elementary teacher on bus duty after school. A parent drives up and wants to know where to park so he can attend a short parent-teacher conference at the school. According to the memo shown, you should tell the parent he may park:
- A. along the side of the driveway.
 - B. in a space in front of the school.
 - C. in an unoccupied staff parking space.
 - D. in the parking lot at the side of the school.
 - E. in the parking lot behind the cafeteria.

Reading for Information Level 5

Individuals with Level 5 skills can apply information from reading materials to new situations that are similar to those described in the materials and they can understand words and phrases with specialized or multiple meanings. Level 5 materials include company policies, procedures, and announcements. All the information in them is stated clearly and directly, but there are many details.

Cable Shopping Club Policies

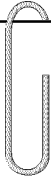
Shipping and Handling:

Customers pay all shipping and handling (S&H) charges, \$8.50 for standard 3-5 day delivery. For jewelry, \$2.00 will be added to S&H; electronics will be \$5.00 in addition to S&H. This upcharge will automatically be added to each order in OrderSys. Cable Shopping Club only ships within the United States. Special S&H charges apply for shipments to Alaska and Hawaii (\$12.50 for standard 3-5 day delivery). For mattresses, ShipSys does not allow shipments to Alaska or Hawaii. Live package tracking is available in ShipSys starting on the business day after the ship date. External tracking numbers will be noted in AcctSys once the order has shipped. These may be given to customers if they request them. These numbers may be entered at carrier websites for basic tracking when it is not available in the CSC system. For specific shipping-related concerns not addressed, customers should be referred to the shipping help line at 800-555-4CSC.

Returns:

Cable Shopping Club agrees to accept, for refund or exchange, any item shipped within the last 30 days. Items shipped 31-60 days ago may be returned for exchange or store credit only. Defective or damaged items may be returned for exchange or refund within 90 days of shipping. S&H is only credited or refunded for defective or damaged items returned within 60 days. A 5% restocking fee applies to all non-defective returns of electronics, which must be applied in AcctSys.

1. You process returns for Cable Shopping Club. A customer received some dishes that were broken during shipment 45 days ago and would like to return them for a refund. According to the policies shown, what type of credit should you issue the customer for the return?
- A. Full refund for the product and S&H
 - B. Full refund for the product only
 - C. Refund for the product after a 5% restocking fee
 - D. Store credit for the product and S&H
 - E. Store credit for the product only
-



**Rushing River
City Center**

1108 River Drive



To: Builders, Contractors, Realtors, New Home Buyers
From: City Administration

The City Building Inspectors are frequently put into a position of deciding whether to allow a new home to be occupied before construction has been completed. The City is willing to work with the contractors and builders when special circumstances warrant. However, be informed that the inspector's job is to ensure that the standards established by the building codes for all structures and the surrounding site are met.

Temporary or final occupancy permits will not be granted if the inspector finds any life/safety problems in the home. In this situation, a buyer cannot move into the home under any circumstance. All critical items must be completed and a reinspection must occur prior to occupation of the home.

If the inspector concludes that there are no life/safety issues but the home and/or site have minor items to be completed, a temporary occupancy permit may be granted. Circumstances allowing the inspector to grant a temporary permit are usually weather related. Temporary means occupation of the home while the listed items are being corrected. There will be a specific deadline to complete all construction. If the items are not completed in the specified time, the inspector has the authority to terminate water service to the home and to have the owner evicted. Additionally, the construction bond will not be returned until all work is finished. If the inspector feels that the typical bond is insufficient to cover the costs of the required work, additional bond must be posted with the City prior to occupancy.

2. The main purpose of the inspection policy shown is to:
- A. allow owners to move into their new homes early under special circumstances.
 - B. encourage city inspectors and builders to work together.
 - C. ensure that a new home is safe before the buyers move in.
 - D. establish eviction procedures to follow when building requirements are not met.
 - E. explain the legal issues regarding the use of occupancy permits.
3. As used in the last sentence of the policy shown, **bond** refers to:
- A. a certificate providing a loan in return for interest.
 - B. a policy covering losses arising from the acts of a builder.
 - C. a sum of money paid as a guarantee of certain action.
 - D. an adhesive used to join two surfaces.
 - E. durable paper used in preparing legal documents.
-

Reading for Information Level 6

Individuals with Level 6 skills can read and understand complex documents and generalize from the materials to new situations. They can correctly apply complex instructions from these materials and understand the rationale behind policies and procedures described in the materials. Level 6 materials may include complex regulatory and legal documents, and rental agreements.

Memorandum

TO: Team Members, Regency Line
FROM: Vice President of Marketing, SunRay Corporation
RE: Regency Line Objectives and Priorities

This memorandum is in response to our discussion on January 30. Its intent is not to dictate, but to reflect my understanding of the team's current objectives and priorities and to share my opinion that my expectations for first year sales from our newly acquired Regency Line have been largely unrealized.

We should treat this, our first year, as a startup enterprise. Given finite startup resources, our primary concentration this year must be on achieving breakeven performance. For the next fiscal year and to the extent available resources permit, we should attend to the potential for sustained profitable performance and future growth in the Regency Line, but not at serious detriment to seeking earliest breakeven.

I believe your analysis contains many of the elements for success. You have identified a potentially powerful organizing theme, and I didn't see anything in your analysis that could not fit comfortably under such a banner. However, when I review next year's sales projections, I have difficulty envisioning a simple mapping of your theme. There are certainly some gaps in the product line that perhaps could be filled by reconstructing product literature and adding a few new products. This would spearhead a really dynamite marketing campaign. In sum, I think you have the makings of a really good idea here, but are still looking at it too much from a "business as usual" framework.

I do not know enough about the trade shows you propose to attend to think of micro-managing your decisions. My general experience has been that attendance is fun, informative, and a good way of gaining and maintaining contacts, some of whom may be useful some day, but not a great way to make quick sales. Given these considerations, I'll back whatever decision you make concerning attendance at trade shows.

1. Based on the memo shown, the vice president of marketing is NOT:
 - A. being receptive to new ideas.
 - B. expressing his opinions.
 - C. listening to his employees.
 - D. showing satisfaction with Regency Line sales.
 - E. working with the team members toward solutions.

 2. Based on the memo shown, the vice president of marketing believes that trade shows are:
 - A. a means to gain useful contacts.
 - B. a waste of time.
 - C. important to boost sales immediately.
 - D. not to be included in the marketing plan.
 - E. opportunities for employment.

 3. Based on the memo shown, what does the vice president think is a weakness of the proposed Regency Line marketing campaign?
 - A. Improvements to the product literature would be too costly.
 - B. The direction that the campaign will take is unclear.
 - C. The marketing analysis is not consistent with the theme.
 - D. The marketing theme is weak and limited.
 - E. The product line needs to be reduced.
-

Reading for Information Level 7

Individuals with Level 7 skills can figure out the underlying principles in complex documents and apply them to situations that are quite different from any described in the materials. They can understand unfamiliar terms from the context. Level 7 materials are densely detailed passages, such as excerpts from complex regulatory and legal documents. They contain complicated concepts and procedures. The language includes jargon and technical terms.

Guidelines for Subject Analysis of Audiovisual Materials

These guidelines, intended for use by librarians and administrators responsible for providing access to library materials, give direction for the subject analysis of audiovisual (hereafter abbreviated as AV) materials. For the purposes of these guidelines, AV covers a wide variety of materials: e.g., moving image materials, kits, art works, and some sound recordings. It excludes music sound recordings and scores, as well as computer software.

Major considerations in providing subject access to library materials include the following:

- Uniform and consistent subject treatment for all materials in the library's collection, including AV materials, promotes ease of use and ready access to a broad range of resources.
- Adequate subject access is essential for all materials in the library's collection, and particularly for AV materials, which are not easily browsed.
- Adherence to standard subject analysis practice (both vocabulary and principles of application), for all library materials, including AV materials, is desirable in order to promote cooperative agreements and resource sharing.
- Classification should be extended to AV materials whether or not the library physically integrates such materials on the shelf. The assignment of classification numbers to AV materials provides for their integration in bibliographies, facilitates automated retrieval, allows for greater flexibility in physical arrangement, and encourages consistency in cataloging.

Striving toward adequate and consistent subject analysis of AV materials in a process like that for other items in the library's collection will both promote economy and efficiency in the cataloging workflow and keep AV materials in the mainstream of bibliographic control and information retrieval systems. We recommend that cataloging organizations implement the above general principles and adopt all of the following principles of application.

Topical headings should be applied to AV materials in the same way they are applied to print material.

- When appropriate, there should be subject access to both the implicit and the explicit topic. For example, a political cartoon may have pictures of an elephant and a donkey, as well as being about politics.
- Non-topical headings, such as genre (e.g., WESTERN FILMS), form (e.g., COMMERCIALS), and technique (e.g., ANIMATION), should be assigned as appropriate.
- When appropriate, provide subject access to the individual parts as well as to the whole for multipart items (e.g., items in a kit or set, films or tapes which include several works, collections of graphic materials).
- Because of certain characteristics common to AV materials, such as currency and specificity, standard subject authority files may lack appropriate terms. In such cases, the following options are available: follow established procedures for proposing new terms and/or scope notes for existing terms to agencies responsible for standard subject heading authority lists; create an appropriate term for local use; use the most appropriate existing term.

Adapted from: Guidelines for Subject Analysis of Audiovisual Materials. Retrieved May 21, 2007, from the American Library Association: <http://www.ala.org/ContentManagement/ContentDisplay.cfm?ContentID=25127>

1. As a librarian, you are developing a policy for cataloging your library's audiovisual materials. According to the guidelines shown, why do AV materials need subject analysis guidelines?
 - A. AV materials require additional equipment to access their content.
 - B. New subject authority files must be created for AV materials.
 - C. Non-topical headings for print materials are more applicable to AV materials.
 - D. They are not as easy to shelve or browse as other library materials.
 - E. They are segregated from other library materials, so they must be cataloged separately.

 2. You are a librarian responsible for developing a policy for AV subject analysis. According to the guidelines shown, the primary reason your policy should follow the field's established subject analysis practice is because this will:
 - A. allow flexibility in the arrangement of materials.
 - B. facilitate automated retrieval.
 - C. offer ready access to a broad range of materials.
 - D. promote an efficient cataloging workflow.
 - E. promote resource sharing among libraries.

 3. You are the librarian responsible for cataloging a recent recording of a program produced by a local television station. Due to the nature of this recording, standard subject headings do not apply. According to the guidelines shown, in order to provide the most accurate subject access possible, you should first:
 - A. assign a non-topical subject heading.
 - B. create a new subject term to be used in your library.
 - C. integrate the item into an existing bibliography.
 - D. provide subject access to parts of the item as well as the whole.
 - E. provide subject access to the implicit and explicit topics.
-

An Important Consideration about the Answers to the Practice Sets

Some ACT WorkKeys questions have a response choice (the “key”) that can be clearly defined as right or correct and other response choices (the “distractors” or “foils”) that can be identified as wrong or incorrect. Many ACT WorkKeys questions, however, are in a best-response format: the keyed response is simply the best of those available. It is important to keep this in mind when discussing such questions, since it will sometimes be possible to think of responses that would be better than any of those offered, or to defend a distractor as not entirely wrong. Best-response formats are consistent with the real world, where choices among less-than-perfect alternatives are routinely the case.

Answers to Reading for Information Level 3 Practice Set

Answer to Level 3 Sample Item 1

- A. **Correct.** *face shield.* The safety rules say that face shields should be “use[d] for face protection from chemicals or when grinding or chipping.”
- B. **Incorrect.** *filtered lens.* Filtered lenses are part of welding shields, not a stand-alone item. Furthermore, the safety rules say that face shields should be “use[d] for face protection from chemicals or when grinding or chipping.”
- C. **Incorrect.** *pair of goggles.* Goggles are the best eye protection, but do not protect the face. The safety rules say that face shields should be “use[d] for face protection from chemicals or when grinding or chipping.”
- D. **Incorrect.** *pair of safety glasses.* Safety glasses provide the least amount of protection and do not protect your face. The safety rules say that face shields should be “use[d] for face protection from chemicals or when grinding or chipping.”
- E. **Incorrect.** *welding shield.* Welding shields protect your face from burns when welding, brazing, soldering, and cutting. The question asks about face protection while grinding. The safety rules say that face shields should be “use[d] for face protection from chemicals or when grinding or chipping.”

Answer to Level 3 Sample Item 2

- A. **Incorrect.** *employees can leave the area in their cars.* The procedure states, “All employees should gather at the northeast corner of the parking lot...so that everyone will be accounted for.” There is no mention of employees leaving in their cars, even though they are in the parking lot.
- B. **Incorrect.** *the fire department can get in.* The procedure states that the fire department will come for anyone who needs assistance leaving the building and will give the all-clear signal. There is no mention of how the fire department will enter. The reason for gathering in the northeast corner of the parking lot is so that you can account for everyone.
- C. **Incorrect.** *they can re-enter the building easily.* There is no reference to whether they should be able to re-enter easily. The reason for gathering in the northeast corner of the parking lot is so that you can account for everyone.
- D. **Incorrect.** *they can hear the all-clear signal.* While it might be possible to hear the signal from the parking lot, the reason for gathering in the northeast corner of the parking lot is so that you can account for everyone.
- E. **Correct.** *you can account for everyone.* The procedure states, “All employees should gather at the northeast corner of the parking lot...so that everyone will be accounted for.”

Answer to Level 3 Sample Item 3

- A. **Incorrect.** *call x4144 to get help.* The procedure states, “When the alarm goes off, first check each employee’s space to make sure they leave the building.” You should call x4144 if the fire department needs to help someone get out of the building.
- B. **Correct.** *check each employee’s space.* The procedure states, “When the alarm goes off, first check each employee’s space to make sure they leave the building.”
- C. **Incorrect.** *check the conference rooms for visitors.* You should check the conference rooms for visitors after you check each employee’s space.
- D. **Incorrect.** *exit the building through the main door.* The procedure states, “When the alarm goes off, first check each employee’s space to make sure they leave the building.” You should exit the building after checking each employee’s space.
- E. **Incorrect.** *take the stairs to the ground floor.* The procedure states, “When the alarm goes off, first check each employee’s space to make sure they leave the building.” You should tell everyone to take the stairs just before you leave the building.

Answers to Reading for Information Level 4 Practice Set

Answer to Level 4 Sample Item 1

- A. Incorrect. *check that your patches are up to date.* According to the notice shown, “if you keep getting a pop-up window saying that your PC will automatically reboot,” it is a sign that something is wrong and you should send an e-mail to technical support. If you already have the most current patches, you will not get a pop-up window asking you to reboot.
- B. Incorrect. *click the Install Now button.* According to the notice shown, “if you keep getting a pop-up window saying that your PC will automatically reboot,” it is a sign that something is wrong and you should send an e-mail to technical support. You will not have an Install Now button.
- C. Incorrect. *restart your PC.* According to the notice shown, “if you keep getting a pop-up window saying that your PC will automatically reboot,” it is a sign that something is wrong and you should send an e-mail to technical support.
- D. **Correct.** *send a message to technical support.* According to the notice shown, “if you keep getting a pop-up window saying that your PC will automatically reboot,” it is a sign that something is wrong and you should send an e-mail to technical support.
- E. Incorrect. *update the system setting.* According to the notice shown, “if you keep getting a pop-up window saying that your PC will automatically reboot,” it is a sign that something is wrong and you should send an e-mail to technical support. This error would occur after you update your system.

Answer to Level 4 Sample Item 2

- A. Incorrect. *At a personally designated area on campus.* The memo mentions that parents and caregivers may meet students at a designated area on campus and it might be incorrectly concluded that the students would be dismissed at the same place.
- B. **Correct.** *At the gate adjacent to room #1.* The memo states “Any students arriving after this time must use the gate adjacent to room #1. This will also be the gate where the students will be dismissed.”
- C. Incorrect. *At the gate on Elm Street.* This location is in the first sentence of the memo, but the memo states that “the gate closest to the Kindergarten classrooms on Elm Street will be locked at 8:30 A.M.”
- D. Incorrect. *By the yellow curb next to the cafeteria.* This is an attractive choice because it is mentioned as a student drop off and pick up for the parents. The pick up spot could be confused with dismissal, but the memo states, “The yellow curb is for drop off and pick up only.”
- E. Incorrect. *Through the gate closest to the Kindergarten classrooms.* This location is mentioned in the first paragraph, but the memo actually states that “the gate closest to the Kindergarten classrooms on Elm Street will be locked at 8:30 A.M.”

Answer to Level 4 Sample Item 3

- A. Incorrect. *along the side of the driveway.* This might appear logical for parking, because the parent will be at the school for a short time, but the memo states, “Cars should not be left unattended in the driveway at any time, for any reason.” The parent should park in a space in front of the school.
- B. **Correct.** *in a space in front of the school.* The memo states, “Spaces in front of the building are designated for visitor parking.” The parent should park in a space in front of the school.
- C. Incorrect. *in an unoccupied staff parking space.* It might appear logical to park here, because it is unoccupied and the parent will be at the school for a short time, but the memo states, “Parents may not park in staff designated parking spots.” The parent should park in a space in front of the school.
- D. Incorrect. *in the parking lot at the side of the school.* This parking area is mentioned in the memo, but it is for staff only. The parent should park in a space in front of the school.
- E. Incorrect. *in the parking lot behind the cafeteria.* This parking area is mentioned in the memo, but the memo states that it is for staff only. The parent should park in a space in front of the school.

Answers to Reading for Information Level 5 Practice Set

Answer to Level 5 Sample Item 1

- A. **Correct.** *Full refund for the product and S&H.* The return policy states, “Defective or damaged items may be returned for exchange or refund within 90 days of shipping.” Since the dishes were damaged and the time given is 45 days after shipping, the customer’s return would qualify for a full refund. With regard to S&H charges, the policy states, “S&H is only credited or refunded for defective items returned within 60 days.” In this case, S&H would be refunded, since the item is being returned within 60 days.
- B. **Incorrect.** *Full refund for the product only.* Attractive because the policy states, “Defective or damaged items may be returned for exchange or refund within 90 days of shipping.” However, S&H is also “refunded for defective items returned within 60 days,” which is the case in the scenario given.
- C. **Incorrect.** *Refund for the product after a 5% restocking fee.* Attractive because the product purchase price would be refunded, but the restocking fee would not apply in this case, since that fee is only for non-defective returns of electronics.
- D. **Incorrect.** *Store credit for the product and S&H.* Attractive because the refund policy says, “Items shipped 31-60 days ago may be returned for exchange or store credit only.” Readers must realize that an exception is given that would apply here: “Defective or damaged items may be returned for exchange or refund within 90 days of shipping.” S&H would be refunded, since the item is being returned within 60 days.
- E. **Incorrect.** *Store credit for the product only.* Attractive because the refund policy says, “Items shipped 31-60 days ago may be returned for exchange or store credit only.” Readers must realize that an exception is given that would apply here: “Defective or damaged items may be returned for exchange or refund within 90 days of shipping.” Also, S&H would be refunded, since the item is being returned within 60 days; the policy states: “S&H is only credited or refunded for defective items returned within 60 days.”

Answer to Level 5 Sample Item 2

- A. **Incorrect.** *allow owners to move into their new homes early under special circumstances.* The first paragraph suggests that the city is willing to allow early move-in; however, the second paragraph cautions that special permits will not be issued if any life/safety issues are unresolved.
- B. **Incorrect.** *encourage city inspectors and builders to work together.* Although this is also mentioned in the first paragraph, the first two paragraphs make it clear that safety is the overriding issue.
- C. **Correct.** *ensure that a new home is safe before the buyers move in.* The first paragraph states, “However, be informed that the inspector’s job is to ensure that the standards established by the building codes for all structures and the surrounding site are met.” The next paragraph cautions that special permits “will not be granted if the inspector finds any life/safety problems in the home.”
- D. **Incorrect.** *establish eviction procedures to follow when building requirements are not met.* The inspector’s power to evict owners is mentioned in the third paragraph only as a caution regarding the importance of safety.
- E. **Incorrect.** *explain the legal issues regarding the use of occupancy permits.* Although occupancy permits are mentioned, the memo does not discuss any legal issues regarding their use.

Answer to Level 5 Sample Item 3

- A. Incorrect. *a certificate providing a loan in return for interest.* Although the memo discusses a bond being posted or given and returned, it is not a loan nor is anything borrowed. As used in this memo, “bond” refers to a sum of money paid as a guarantee that the City will not have to pay the cost of completing work that is supposed to be completed by the builder. You can infer this meaning from the statement that “additional bond must be posted” if the original amount is not high enough.
- B. Incorrect. *a policy covering losses arising from the acts of a builder.* Although the memo mentions covering costs, nothing describes covering losses. As used in this memo, “bond” refers to a sum of money paid as a guarantee that the City will not have to pay the cost of completing work that is supposed to be completed by the builder. You can infer this meaning from the statement that “additional bond must be posted” if the original amount is not high enough.
- C. **Correct.** *a sum of money paid as a guarantee of certain action.* If the work is not completed, the bond money can be used to hire someone else to finish the job. This meaning is implied when the text states, “If the inspector feels that the typical \$500 bond is insufficient to cover the costs...additional bond must be posted with the City prior to occupancy.”
- D. Incorrect. *an adhesive used to join two surfaces.* This meaning could seem logical because the topic of the memo is construction; however, as used in this memo, “bond” refers to a sum of money paid as a guarantee that the City will not have to pay the cost of completing work that is supposed to be completed by the builder. You can infer this meaning from the statement that “additional bond must be posted” if the original amount is not high enough.
- E. Incorrect. *durable paper used in preparing legal documents.* Although durable “bond paper” can be used in preparing legal documents, this is not what the term “bond” refers to in the memo. As used in this memo, “bond” refers to a sum of money paid as a guarantee that the City will not have to pay the cost of completing work that is supposed to be completed by the builder. You can infer this meaning from the statement that “additional bond must be posted” if the original amount is not high enough.

Answers to Reading for Information Level 6 Practice Set

Answer to Level 6 Sample Item 1

- A. Incorrect. *being receptive to new ideas*. In the third paragraph, the vice president states, “In sum, I think you have the makings of a really good idea here, but are still looking at it too much from a ‘business as usual’ framework.” This shows that the vice president welcomes new ideas.
- B. Incorrect. *expressing his opinions*. In the first paragraph the vice president states, “...and to share my opinion that my expectations for first year sales from our newly acquired Regency Line have been largely unrealized.”
- C. Incorrect. *listening to his employees*. In the first paragraph the vice president states, “This memorandum is in response to our discussion on January 30. Its intent is not to dictate, but to reflect my understanding of the team’s *current objectives and priorities...*” He is responding to what his employees have said earlier.
- D. **Correct**. *showing satisfaction with Regency Line sales*. In the last sentence of the first paragraph, the vice president implies this when he states “...my expectations for first year sales from our newly acquired Regency Line have been largely unrealized.”
- E. Incorrect. *working with the team members toward solutions*. The vice president has made useful suggestions in the third paragraph such as, “There are certainly some gaps in the product line that perhaps could be filled by reconstructing product literature and adding a few new products. This would spearhead a really dynamite marketing campaign.”

Answer to Level 6 Sample Item 2

- A. **Correct**. *a means to gain useful contacts*. The vice president states in the fourth paragraph, “My general experience has been that attendance is fun, informative, and a good way of gaining and maintaining contacts, some of whom may be useful some day, but not a great way to make quick sales.”
- B. Incorrect. *a waste of time*. Although the vice president states that trade shows are “not a great way to make quick sales,” he does acknowledge the value of attending trade shows, because they are “a good way of gaining and maintaining contacts, some of whom may be useful some day.”
- C. Incorrect. *important to boost sales immediately*. The vice president says that trade shows are “a good way of gaining and maintaining contacts, . . . but not a great way to make quick sales.”
- D. Incorrect. *not to be included in the marketing plan*. The vice president states in the last sentence of paragraph four that the decision to include trade shows in the marketing plan is up to the team members. He states, “I do not know enough about the trade shows you propose to attend to think of micro-managing your decisions.”
- E. Incorrect. *opportunities for employment*. Although there are many vendors at trade shows, and therefore possible opportunities for new employment, the vice president does not state this nor would he logically desire to lose employees to other businesses.

Answer to Level 6 Sample Item 3

- A. Incorrect. *Improvements to the product literature would be too costly*. There is no discussion about costs being too high for product literature. In paragraph three, the vice president states, “There are certainly some gaps in the product line that perhaps could be filled by reconstructing product literature and adding a few new products.” His statement indicates that improvements to the product literature are very possible.
- B. **Correct**. *The direction that the campaign will take is unclear*. Although the vice president praises the marketing analysis, the memo states, “However, when I review next year’s sales projections, I have difficulty envisioning a simple mapping of your theme.”
- C. Incorrect. *The marketing analysis is not consistent with the theme*. Although the vice president has “difficulty envisioning a simple mapping of your theme,” the third paragraph states that analysis does fit under the theme.
- D. Incorrect. *The marketing theme is weak and limited*. The marketing theme is described in paragraph three: “You have identified a potentially powerful organizing theme, and I didn’t see anything in your analysis that could not fit comfortably under such a banner.”
- E. Incorrect. *The product line needs to be reduced*. The product line is mentioned in the memo; however, the memo states, “There are certainly some gaps in the product line that perhaps could be filled by reconstructing product literature and adding a few new products. This would spearhead a really dynamite marketing campaign.” This statement indicates that the vice president thinks the product line may need to be expanded.

Answers to Reading for Information Level 7 Practice Set

Answer to Level 7 Sample Item 1

- A. Incorrect. *AV materials require additional equipment to access their content.* The guidelines state, “AV materials ... are not easily browsed” and imply that AV materials may not always be shelved with other items. Attractive because it is true that some AV materials (sound recordings, films) need additional equipment, but there is no indication in the guidelines that this requirement would affect the cataloging of these materials.
- B. Incorrect. *New subject authority files must be created for AV materials.* The guidelines state that “AV materials ... are not easily browsed” and imply that AV materials may not always be shelved with other items. Attractive because it is true that new subject headings must occasionally be created for AV materials, but it is not always the case that this must happen.
- C. Incorrect. *Non-topical headings for print materials are more applicable to AV materials.* The guidelines state, “AV materials ... are not easily browsed” and imply that AV materials may not always be shelved with other items. Attractive because AV materials often require special considerations when applying subject headings, but there is no indication in the guidelines that non-topical headings used for print materials are more or less applicable to AV materials.
- D. **Correct.** *They are not as easy to shelve or browse as other library materials.* The guidelines state, “AV materials ... are not easily browsed” and imply that AV materials may not always be shelved with other items. Not too obvious because it is not stated directly.
- E. Incorrect. *They are segregated from other library materials, so they must be cataloged separately.* The guidelines state, “AV materials ... are not easily browsed” and imply that AV materials may not always be shelved with other items. Attractive because it is true that AV materials are often shelved separately; however, the guidelines make clear that AV material listings should be integrated into the existing catalog, not separately.

Answer to Level 7 Sample Item 2

- A. Incorrect. *allow flexibility in the arrangement of materials.* The guidelines state, “Adherence to standard subject analysis practice ... is desirable in order to promote cooperative agreements and resource sharing.” Attractive, since this is an advantage of a good AV cataloging policy; however, it is not the primary reason the policy should follow established standards. The library could create its own standards and still allow for flexible arrangement of library materials.
- B. Incorrect. *facilitate automated retrieval.* The guidelines state, “Adherence to standard subject analysis practice ... is desirable in order to promote cooperative agreements and resource sharing.” Attractive because this is an advantage of a good AV cataloging policy; however, it is not the primary reason the policy should follow established standards. The library could create its own standards and still allow for easy automated retrieval.
- C. Incorrect. *offer ready access to a broad range of materials.* The guidelines state, “Adherence to standard subject analysis practice ... is desirable in order to promote cooperative agreements and resource sharing.” Attractive because this is an advantage of a good AV cataloging policy; however, it is not the primary reason the policy should follow established standards. The library could create its own standards and still provide access to a wide range of materials.
- D. Incorrect. *promote an efficient cataloging workflow.* The guidelines state, “Adherence to standard subject analysis practice ... is desirable in order to promote cooperative agreements and resource sharing.” Attractive because this is an advantage of a good AV cataloging policy; however, it is not the primary reason the policy should follow established standards. The library could create its own standards and still have an efficient workflow.
- E. **Correct.** *promote resource sharing among libraries.* The guidelines state, “Adherence to standard subject analysis practice ... is desirable in order to promote cooperative agreements and resource sharing.” It would be difficult to share resources with other libraries if all used different cataloging standards, so this is the primary reason given in the guidelines for following the established guidelines. Not obvious because the wording is different in the original guidelines.

Answer to Level 7 Sample Item 3

- A. Incorrect. *assign a non-topical subject heading*. The guidelines state that, in the case of standard subject authority files lacking appropriate terms, one option is to create an appropriate term for local use. Because this is a local item for which there are few established subject headings, creating a new term for local use is the best way to provide complete access. Attractive because assigning a non-topical heading is a cataloging option, but is not the best way to provide complete access in this particular scenario.
- B. **Correct.** *create a new subject term to be used in your library*. The guidelines state that, in the case of standard subject authority files lacking appropriate terms, one option is to create an appropriate term for local use. Because this is a local item for which there are few established subject headings, creating a new term for local use is the best way to provide complete access. Not obvious because this particular scenario is not explicitly described in the guidelines.
- C. Incorrect. *integrate the item into an existing bibliography*. The guidelines state that, in the case of standard subject authority files lacking appropriate terms, one option is to create an appropriate term for local use. Because this is a local item for which there are few established subject headings, creating a new term for local use is the best way to provide complete access. Attractive because easily integrating items into a bibliography is one result of good cataloging, but it is not a method for providing subject access.
- D. Incorrect. *provide subject access to parts of the item as well as the whole*. The guidelines state that, in the case of standard subject authority files lacking appropriate terms, one option is to create an appropriate term for local use. Because this is a local item for which there are few established subject headings, creating a new term for local use is the best way to provide complete access. Attractive because the guidelines discusses providing subject access to both parts and the whole (though it says you should provide access to the parts and the whole), but this not the best way to provide complete access in this particular scenario.
- E. Incorrect. *provide subject access to the implicit and explicit topics*. The guidelines state that, in the case of standard subject authority files lacking appropriate terms, one option is to create an appropriate term for local use. Because this is a local item for which there are few established subject headings, creating a new term for local use is the best way to provide complete access. Attractive because the guidelines discusses providing subject access to both implicit and explicit topics (though it says you should provide access to the implicit and the explicit topic), but this not the best way to provide complete access in this particular scenario.