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# **SPECTRUM<sup>®</sup> Test Practice**

## **Common Core State Standards Practice Test**

# **Puerto Rico Edition**

## **Grade 7**

Puerto Rico has adopted the Common Core State Standards in English Language Arts and Mathematics.

The Common Core State Standards are:

- Rigorous.
- Based on the best available evidence and research.
- Aligned with college and work expectations.
- Benchmarked to the highest educational standards from around the world.

For more information:

Common Core State Standards Initiative:

<http://www.corestandards.org/>

Departamento de Educación de Puerto Rico:

<http://www.de.gobierno.pr/>

**Grade 7 Common Core State Standards Practice Test****ENGLISH LANGUAGE ARTS****● Part 1: Reading Literature**

**Directions:** Read the poem. Choose the best answers to the questions that follow.

***The Road Not Taken***

*by Robert Frost*

Two roads diverged in a yellow wood,  
And sorry I could not travel both  
And be one traveler, long I stood  
And looked down one as far as I could  
To where it bent in the undergrowth;

Then took the other, as just as fair,  
And having perhaps the better claim,  
Because it was grassy and wanted wear;  
Though as for that the passing there  
Had worn them really about the same,

And both that morning equally lay  
In leaves no step had trodden black.  
Oh, I kept the first for another day!  
Yet knowing how way leads on to way,  
I doubted if I should ever come back.

I shall be telling this with a sigh  
Somewhere ages and ages hence:  
Two roads diverged in a wood, and I—  
I took the one less traveled by,  
And that has made all the difference.

1. What happens in the first verse?

- (A) The traveler is lost and stops for directions.
- (B) The traveler thinks about which road to take.
- (C) The traveler chooses a road.
- (D) The traveler is bothered by the undergrowth.

2. In the third verse, what does the narrator think about the first road?

- (F) He will take it the next day.
- (G) He regrets that he did not take it.
- (H) He knows he will never come back to take it.
- (J) He knows it was not the right choice for him.



**ENGLISH LANGUAGE ARTS****● Part 1: Reading Literature (cont.)**

**Directions:** Use the poem you read on page 1 to choose the best answers to the questions.

3. What is the meaning of *diverged* in verse one, line one?
- (A) ended
  - (B) intersected
  - (C) went in the same direction
  - (D) separated
4. Which statement best summarizes the theme of the poem?
- (F) The decisions you make in life shape who you become.
  - (G) It is always best to choose a straight road.
  - (H) Older people often regret things they did earlier.
  - (J) The less traveled road is always the best one.
5. What does the narrator say about the roads in verse two and how does this relate to the final verse?
- (A) One road has higher grass than the other and is the *one less traveled by* in the last verse.
  - (B) The roads have been equally worn or traveled and so there is no clear *one less traveled by* in the last verse.
  - (C) The roads are both overgrown, so the narrator did not really choose either road.
  - (D) One road is bent and mysterious and is the *one less traveled by* in the last verse.
6. In verse two, what justification does the narrator give for the road he chooses?
- (F) The grass there had died from too many travelers.
  - (G) The road needed to be fixed.
  - (H) The road was full of grass and needed to be used.
  - (J) The road he chose was more beautiful than the other one.
7. In the poem, the roads represent choices in life. This is an example of which figure of speech?
- (A) simile
  - (B) personification
  - (C) metaphor
  - (D) alliteration
8. What does the narrator imply about his future retelling of the event?
- (F) His future retelling will be exactly the same.
  - (G) His future retelling will state it did not matter which road he chose.
  - (H) His future retelling will be full of regret.
  - (J) His future retelling will be different as a result of the choices he has made in life.



**ENGLISH LANGUAGE ARTS****● Part 1: Reading Literature (cont.)**

**Directions:** Use the poem you read on page 1 to choose the best answers to the questions.

9. Which statement about the form of the poem is true?

- (A) This is a lyric poem that describes feelings about an event or a topic.
- (B) This is a sonnet that compares and contrasts two different ideas.
- (C) This is a limerick that treats the topic with humor.
- (D) This is a haiku that focuses on an image from nature.

10. What is the meaning of *trodden* in verse three?

- (F) moistened
- (G) trampled
- (H) rearranged
- (J) torn

11. How does the setting of the poem relate to its meaning?

- (A) Undergrowth represents mysteries in life.
- (B) The yellow wood represents the importance of nature in life.
- (C) The diverging roads represent the fast pace of life.
- (D) The roads in the woods represent the choices in life.

12. When will the narrator tell the story about the roads?

- (F) the next afternoon in town
- (G) many years in the future
- (H) on the same road in a few years
- (J) on a different road on another trip

13. Which statement about each verse is not true?

- (A) It has five lines.
- (B) The words that end the second and fifth lines rhyme.
- (C) The words that end the second and third lines rhyme.
- (D) The words that end the first, third, and fourth lines rhyme.

14. Which point of view is used in the poem?

- (F) second person
- (G) first person
- (H) third person limited
- (J) third person omniscient



**ENGLISH LANGUAGE ARTS****● Part 2: Reading Informational Text**

**Directions:** Read the text. Then, choose the best answers to the questions that follow.

***from Narrative of the Life of Frederick Douglass******by Frederick Douglass***

... The slaves of all the other farms received their monthly allowance of food, and their yearly clothing. The men and women slaves received, as their monthly allowance of food, eight pounds of pork, or its equivalent in fish, and one bushel of corn meal. Their yearly clothing consisted of two coarse linen shirts, one pair of linen trousers, like the shirts, one jacket, one pair of trousers for winter, made of coarse negro cloth, one pair of stockings, and one pair of shoes; the whole of which could not have cost more than seven dollars. The allowance of the slave children was given to their mothers, or the old women having the care of them. The children unable to work in the field had neither shoes, stockings, jackets, nor trousers, given to them; their clothing consisted of two coarse linen shirts per year. When these failed them, they went naked until the next allowance-day. Children from seven to ten years old, of both sexes, almost naked, might be seen at all seasons of the year.

There were no beds given the slaves, unless one coarse blanket be considered such, and none but the men and women had these. This, however, is not considered a very great privation. They find less difficulty from the want of beds, than from the want of time to sleep; for when their day's work in the field is done, the most of them having their washing, mending, and cooking to do, and having few or none of the ordinary facilities for doing either of these, very many of their sleeping hours are consumed in preparing for the field the coming day; and when this is done, old and young, male and female, married and single, drop down side by side, on one common bed—the cold, damp floor—each covering himself or herself with their miserable blankets; and here they sleep till they are summoned to the field by the driver's horn. At the sound of this, all must rise, and be off to the field. There must be no halting; every one must be at his or her post; and woe betides them who hear not this morning summons to the field; for if they are not awakened by the sense of hearing, they are by the sense of feeling: no age nor sex finds any favor. Mr. Severe, the overseer, used to stand by the door of the quarter, armed with a large hickory stick and heavy cowskin, ready to whip any one who was so unfortunate as not to hear, or, from any other cause, was prevented from being ready to start for the field at the sound of the horn.



**ENGLISH LANGUAGE ARTS****● Part 2: Reading Informational Text (cont.)**

**Directions:** Use the text you read on page 4 to choose the best answers for the questions.

1. **What is the overall structure of this text?**

- (A) cause and effect
- (B) problem and solution
- (C) main idea and details
- (D) comparison

2. **What evidence does the author give that the slaves suffered from sleep deprivation?**

- (F) They were forced to do their own household chores at night.
- (G) People often shared a common bed.
- (H) Many of the slaves did not want to sleep on the floor.
- (J) They had children to watch at night.

3. **In the second paragraph, what does *halting* mean?**

- (A) dreaming
- (B) complaining
- (C) worrying
- (D) stopping

4. **What was the clothing often like for children from seven to ten years old?**

- (F) They sometimes went naked at all times of the year.
- (G) Girls each got one dress and boys got one pair of pants.
- (H) They got the same amount of clothing as the adults.
- (J) Their mothers made their clothes from old cloth.

5. **Which statement best states the main idea of the first paragraph?**

- (A) Some farmers were more generous than others.
- (B) The slaves got new clothes each month.
- (C) The slaves got high-quality food to keep them healthy.
- (D) The slaves were given minimal food and clothing.

6. **What word in the second paragraph means about the same as *hardship*?**

- (F) facilities
- (G) privation
- (H) common
- (J) favor



**ENGLISH LANGUAGE ARTS****● Part 2: Reading Informational Text (cont.)**

**Directions:** Use the text you read on page 4 to choose the best answers for the questions.

7. Douglass uses *coarse* several times. What is the connotation of this word in the selection?
- (A) It evokes negative thoughts of boredom and apathy.
  - (B) It evokes positive thoughts of country life.
  - (C) It evokes negative thoughts of hardship and suffering.
  - (D) It evokes positive thoughts of homemade things.
8. What inference can the reader make from the phrase *woe betides them* in the second paragraph?
- (F) The slaves are going out to work on the sea.
  - (G) The slaves are unsure of what will happen if they don't hurry.
  - (H) The slaves stop and wait for each other.
  - (J) The slaves will be punished.
9. Which statement about Mr. Severe is true?
- (A) He was equally harsh to all of the slaves.
  - (B) He was unpredictable.
  - (C) He treated the women better than the men.
  - (D) He never used his large hickory stick.
10. The text states that the slaves might be awakened *by the sense of feeling*. Which statement supports this point?
- (F) They might wake because the room was too damp.
  - (G) The warm fire might wake them.
  - (H) Feeling the overseer's whip might wake them.
  - (J) The uncomfortable blankets might make it hard to sleep.
11. Which statement based on the text shows that slave owners did not care about the slaves' comfort?
- (A) Their yearly food budget was four dollars.
  - (B) Their yearly clothing budget was not more than seven dollars.
  - (C) Their beds were hard and uncomfortable.
  - (D) Their winter trousers were made of linen.
12. What genre is *Narrative of the Life of Frederick Douglass*?
- (F) interview
  - (G) essay
  - (H) persuasive speech
  - (J) autobiography



**ENGLISH LANGUAGE ARTS****● Part 2: Reading Informational Text (cont.)**

**Directions:** Use the text you read on page 4 to choose the best answers for the questions.

13. Which statement about the slave children is true, according to the first paragraph?

- (A) Some of them were cared for by old women.
- (B) Most of them worked in the fields with their mothers.
- (C) Working and non-working children got the same clothes.
- (D) Slaves had to pay extra for their children's clothing.

14. What were the sleeping conditions for the slaves?

- (F) They each had a blanket but no bed.
- (G) They took turns sleeping and doing chores.
- (H) The women had beds but the men did not.
- (J) Each slave had his or her own bed.

15. Which statement best summarizes the text?

- (A) Slavery was a necessary evil.
- (B) The life of a slave was difficult.
- (C) Some farmers treated their slaves well.
- (D) The overseers had to be harsh.

16. How does the driver wake the slaves?

- (F) He throws cold water on them.
- (G) He sends dogs into their cabins.
- (H) He blows a horn at them.
- (J) He calls each of them by name.

17. The author of this text presents

- (A) a persuasive account that uses loaded words.
- (B) an inaccurate account that cannot be confirmed.
- (C) a factual account without stating an opinion.
- (D) a description that is biased toward the farmers.

18. From which point of view does Frederick Douglass write?

- (F) a young boy
- (G) an overseer
- (H) a farmer
- (J) a slave





## ENGLISH LANGUAGE ARTS

### ● Part 3: Writing

**Directions:** On a separate piece of paper, write a response to each prompt. Include all the parts in the checklists.

#### 1. Write an Argument

Imagine that a shopping mall near you has a rule that people under the age of 18 cannot congregate or walk through the mall in groups of more than three. Write a letter to the manager of the mall to state your opinion about the rule and argue that it should be changed or remain in place.

**Checklist:**

Read what you wrote. Did you remember to do the following?

	Yes	No
Introduce your claim and acknowledge alternate or opposing claims.	<input type="checkbox"/>	<input type="checkbox"/>
Support your claim with logical and well-organized reasons and evidence.	<input type="checkbox"/>	<input type="checkbox"/>
Use a formal style.	<input type="checkbox"/>	<input type="checkbox"/>
Provide a concluding statement that supports your argument.	<input type="checkbox"/>	<input type="checkbox"/>

#### 2. Write to Inform

Write about a favorite Web site that provides useful and interesting information. Explain what resources the site offers, how the site is organized, and how you use it.

**Checklist:**

Read what you wrote. Did you remember to do the following?

	Yes	No
Introduce your topic and preview what is to follow.	<input type="checkbox"/>	<input type="checkbox"/>

Develop the topic with facts, definitions, details, and examples organized into categories.

Include headings, graphs, or other visuals that will help the reader understand.

Use a formal style.

Include a concluding statement that supports the information.

#### 3. Write a Narrative

Write a fictional story about a boy or girl your age and a problem that gets solved during one very long day at school.

**Checklist:**

Read what you wrote. Did you remember to do the following?

	Yes	No
Establish a setting and a point of view.	<input type="checkbox"/>	<input type="checkbox"/>
Introduce and develop characters.	<input type="checkbox"/>	<input type="checkbox"/>
Use narrative techniques, including dialogue, flashbacks or foreshadowing, and description.	<input type="checkbox"/>	<input type="checkbox"/>
Use transitional words and phrases to show the sequence of events.	<input type="checkbox"/>	<input type="checkbox"/>
Use sensory language to capture the action.	<input type="checkbox"/>	<input type="checkbox"/>
End with a conclusion that reflects upon the story.	<input type="checkbox"/>	<input type="checkbox"/>



**ENGLISH LANGUAGE ARTS****● Part 4: Language****Directions:** Choose the best answer for each question.

1. Which sentence includes an appositive phrase?

- (A) The last soccer game was played on Saturday.
- (B) By cheering us on, the crowd helped us win the game.
- (C) Ms. Watkins, the soccer coach, helped us train.
- (D) We are planning a party to be held later on.

2. Which sentence correctly uses a comma to separate coordinate adjectives?

- (F) We saw the glistening, glimmering dewdrops.
- (G) The fierce, March winds blew down the wires.
- (H) I would like some cold, iced tea now.
- (J) On Friday we will all wear orange, team T-shirts.

3. The Latin root *man* means “hand.” Which word does not contain this root?

- (A) manipulate
- (B) manual
- (C) manufacture
- (D) automate

4. Which is a complex sentence?

- (F) Sue and Tom play soccer and hockey.
- (G) The team will play until the tie is broken.
- (H) Our team won the championship last year.
- (J) The trophy is gold, and it is very heavy and tall.

5. Which word is an antonym for *remonstrate*?

- (A) protest
- (B) agree
- (C) complain
- (D) ramble

6. Which two words are synonyms?

- (F) strenuous/difficult
- (G) tumult/peace
- (H) zealous/apathetic
- (J) wretched/jovial



**ENGLISH LANGUAGE ARTS**

**● Part 4: Language (cont.)**

**Directions:** Choose the best answer for each question.

7. Which sentence contains an example of a misplaced modifier?

- (A) The prince found the princess's glass slipper.
- (B) The baby picked up her favorite stuffed bear.
- (C) I ate a dish of hot oatmeal for breakfast.
- (D) The dog chewed the torn boy's shirt.

8. Based on this analogy, what is the best meaning of *sinister*?

**hero : benevolent :: villain : sinister**

- (F) cunning
- (G) generous
- (H) wicked
- (J) proud

9. Which word is spelled correctly?

- (A) subsaquent
- (B) subsequent
- (C) subsuquant
- (D) subsiquint

10. The Greek root *ast* means "star." Which word does not contain this root?

- (F) astronomy
- (G) asterisk
- (H) disaster
- (J) interstellar

11. Which word best completes the sentence?

The little girl gently \_\_\_\_\_ at her new puppy.

- (A) smiled
- (B) smirked
- (C) grimaced
- (D) glared

12. Which sentence contains a dangling modifier?

- (F) While I was walking, I saw a rainbow.
- (G) The fisherman's line shook, and he reeled in a fish.
- (H) Having been tossed in the water, the boy chased the ball.
- (J) With a loud roar, the lion attacked the gazelle.



**ENGLISH LANGUAGE ARTS**

**● Part 4: Language (cont.)**

**Directions:** Choose the best answer for each question.

13. Which is a compound sentence?

- (A) Sixteen-year-olds can drive, but they cannot vote.
- (B) Jefferson and Washington were both from Virginia.
- (C) The mayor came to the meeting and talked to us.
- (D) Our government consists of three different branches.

14. Which word is spelled correctly?

- (F) trecherus
- (G) tretcharus
- (H) taretcherous
- (J) treacherous

15. What is the meaning of the underlined phrase?

Patty was usually thrifty, but buying books was her Achilles' heel.

- (A) main interest
- (B) area of weakness
- (C) best talent
- (D) biggest passion

16. Which sentence expresses an idea without redundancy?

- (F) The new swimming pool will be arriving at 8:00 a.m. in the morning.
- (G) As an example of mimicry, some butterflies look alike, for instance.
- (H) The red kangaroo is the largest living marsupial.
- (J) The reason for the fact that we are late is because Dad forgot to set the alarm.

17. Which biology term completes the sentence?

The gorilla is the world's largest \_\_\_\_\_.

- (A) primate
- (B) amphibian
- (C) carnivore
- (D) arachnid

18. What part of speech are the words *virtually* and *significantly*?

- (F) conjunctions
- (G) prepositions
- (H) gerunds
- (J) adverbs



**ENGLISH LANGUAGE ARTS**

**● Part 4: Language (cont.)**

**Directions:** Choose the best answer for each question.

19. What is the meaning of the underlined word?

Louisa had an uncanny sense of direction and never lost the trail.

- (A) inaccurate
- (B) extraordinary
- (C) predictable
- (D) average

20. What is the meaning of the underlined phrase?

Our new car was a lemon, so we took it back to the dealer and demanded a replacement.

- (F) outdated
- (G) sour-smelling
- (H) unfashionable
- (J) defective

21. Which math term best completes the sentence?

This year in our study of \_\_\_\_\_, we will look at points, lines, angles, and shapes.

- (A) geometry
- (B) algebra
- (C) trigonometry
- (D) calculus

22. In a thesaurus, which word would not be listed as a synonym for *vicious*?

- (F) malicious
- (G) cruel
- (H) sympathetic
- (J) brutal

23. Which figure of speech is shown by the underlined phrase?

The crashing, pounding, and smashing of the surf kept her awake all night.

- (A) onomatopoeia
- (B) alliteration
- (C) simile
- (D) personification

24. Which pronunciation would appear in a dictionary entry for *phenomenon*?

- (F) fu•nahm•uhn•ahn
- (G) fuhn•a•muhn•ahn
- (H) fuh•nam•uhn•ahn
- (J) fuh•nah•muh•nahn



## MATHEMATICS

### ● Part 1: Ratios and Proportional Relationships

**Directions:** Choose the best answer for each question.

1. A scale model uses a scale of  $\frac{1}{2}$  inch:5 yards. Which shows this ratio in inches?

- (A) 1:10
- (B) 1:120
- (C) 1:360
- (D) 1:30

2. A shirt, regularly priced at \$25, is on sale for 30% off. What is the new price of the shirt?

- (F) \$22.00
- (G) \$19.00
- (H) \$18.50
- (J) \$17.50

3. What number completes the equation for the relation shown in the table?

$$y = \square x$$

$x$	$y$
6	42
9	63
13	91

- (A) 7
- (B) 8
- (C) 9
- (D) 6

4. Which pair of ratios forms a proportion?

- (F)  $\frac{9}{12}$  and  $\frac{21}{28}$
- (G)  $\frac{5}{10}$  and  $\frac{8}{18}$
- (H)  $\frac{12}{18}$  and  $\frac{12}{16}$
- (J)  $\frac{15}{20}$  and  $\frac{8}{12}$

5. Gabe hikes  $1\frac{1}{2}$  miles in  $\frac{3}{4}$  hour. How fast does he hike?

- (A)  $\frac{1}{8}$  mph
- (B)  $\frac{3}{8}$  mph
- (C) 2 mph
- (D) 8 mph

6. At a grocery store, 8 pounds of potatoes cost \$2.24. What is the unit rate?

- (F) \$0.28 per pound
- (G) \$0.25 per pound
- (H) \$0.23 per pound
- (J) \$0.33 per pound



**MATHEMATICS**

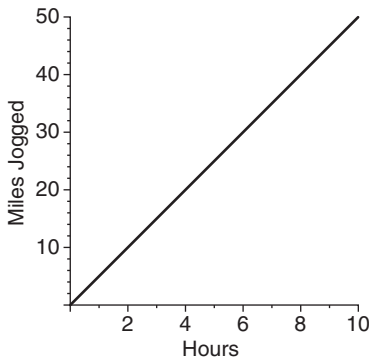
**● Part 1: Ratios and Proportional Relationships (cont.)**

**Directions:** Choose the best answer for each question.

7. A new game system costs \$185 before sales tax. The sales tax is 6%. What is the total cost of the game system?

- (A) \$191.00
- (B) \$197.00
- (C) \$194.70
- (D) \$196.10

8. What does the point (6, 30) represent on the graph?

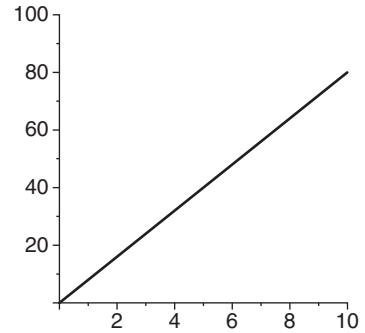


- (F) 30 miles jogged in 6 hours
- (G) 6 miles jogged in 30 hours
- (H) 30 miles jogged in 6 days
- (J) 30 days of jogging 6 miles each day

9. Julio deposits \$135 into an account that earns 2% simple interest per year. How much interest will that money earn in 8 years?

- (A) \$16.00
- (B) \$21.60
- (C) \$151.00
- (D) \$156.60

10. What is the constant of proportionality in this graph?



- (F) 10
- (G) 8
- (H) 16
- (J) 1

11. Which value of  $x$  makes the proportion true?

$$\frac{25}{35} = \frac{x}{14}$$

- (A) 10
- (B) 8
- (C) 6
- (D) 4

12. Which shows the rate 15 miles:  $\frac{1}{3}$  gallon simplified?

- (F) 5 miles:1 gallon
- (G) 30 miles:1 gallon
- (H) 75 miles:1 gallon
- (J) 45 miles:1 gallon



## MATHEMATICS

### ● Part 1: Ratios and Proportional Relationships (cont.)

**Directions:** Choose the best answer for each question.

13. Bradley measures the length of a piece of string as 87 centimeters when measured to the nearest centimeter. What is the percent of error?

- (A) 5.7%
- (B) 11.5%
- (C) 0.57%
- (D) 1.15%

14. One paper company makes notebooks so that the length is proportional to the width. It makes one notebook that is  $8\frac{1}{2}$  inches wide by 11 inches long. Which equation shows the relationship between the length and the width?

- (F)  $l = \frac{22}{17} \times w$
- (G)  $l = \frac{17}{22} \times w$
- (H)  $l = 2.5w$
- (J)  $l = 2.5 + w$

15. Which value of  $x$  makes the proportion true?

$$\frac{x}{25} = \frac{18}{40}$$

- (A) 3
- (B) 11.25
- (C) 10
- (D) 9.75

16. What is the constant of proportionality in the table?

$x$	$f(x)$
12	30
14	35
18	45

- (F) 2.5
- (G) 5
- (H) 10
- (J) 30

17. Mr. Williams buys lunch for \$18. He wants to leave a 15% tip. How much should he leave as a tip?

- (A) \$2.00
- (B) \$3.00
- (C) \$2.70
- (D) \$1.80

18. Raquel wants to buy a dress that has been marked up 40% from its wholesale price. It costs \$49 now. What was the wholesale price?

- (F) \$68.60
- (G) \$50.96
- (H) \$35.00
- (J) \$47.12





**MATHEMATICS****● Part 2: The Number System****Directions:** Choose the best answer for each question.

1.  $-5.28 \div -16 = \square$

- (A) 0.33  
(B)  $-0.33$   
(C) 0.033  
(D)  $-0.033$

2. On three consecutive plays, a football team gains 3 yards,  $-12$  yards, and 17 yards. How many total yards did they gain on those plays?

- (F) 32  
(G) 5  
(H) 20  
(J) 8

3. Which of the following must not be true if  $a \div b > 0$ ?

- (A)  $a$  and  $b$  are both positive.  
(B)  $a$  is positive and  $b$  is negative.  
(C)  $a$  and  $b$  are both negative.  
(D)  $a$  and  $b$  are both integers.

4. Which expression is equivalent to  $5 - (-6)$ ?

- (F)  $-6 - 5$   
(G)  $-6 + 5$   
(H)  $5 - 6$   
(J)  $5 + 6$

5. The temperature at 6:00 p.m. was  $5^{\circ}\text{C}$ . Overnight, the temperature dropped to a low of  $8^{\circ}\text{C}$  colder. What was the low temperature overnight?

- (A)  $13^{\circ}\text{C}$   
(B)  $8^{\circ}\text{C}$   
(C)  $-3^{\circ}\text{C}$   
(D)  $-13^{\circ}\text{C}$

6. Which expression is positive?

- (F)  $-53 \times 47$   
(G)  $25 \times -16$   
(H)  $42 \times (-15 + 15)$   
(J)  $-71 \times -18$

7. What is the opposite of the absolute value of  $-6$ ?

- (A) 6  
(B)  $\frac{1}{6}$   
(C)  $-\frac{1}{6}$   
(D)  $-6$

8. Which decimal is equivalent to  $\frac{11}{15}$ ?

- (F)  $0.7\overline{3}$   
(G) 0.75  
(H)  $0.\overline{6}$   
(J) 0.6



**MATHEMATICS****● Part 2: The Number System (cont.)****Directions:** Choose the best answer for each question.**9. Which describes the sum of  $5 + ^{-}6$ ?**

- (A)  $|^{-}6|$  more than 5  
(B) 5 fewer than  $|^{-}6|$   
(C)  $|^{-}6|$  fewer than 5  
(D) 5 more than  $|^{-}6|$

**10.  $^{-}0.58 + (^{-}3.47) = \square$** 

- (F) 4.05  
(G)  $^{-}4.05$   
(H) 2.89  
(J)  $^{-}2.89$

**11. Two numbers have a sum of  $^{-}18$  and a product of 72. What are the numbers?**

- (A)  $^{-}6$  and  $^{-}12$   
(B)  $^{-}10$  and  $^{-}8$   
(C) 12 and 6  
(D) 8 and 10

**12.  $^{-}3.94 \times 1.5 = \square$** 

- (F) 5.91  
(G)  $^{-}5.91$   
(H) 5.81  
(J)  $^{-}5.81$

**13. Which expression tells how far apart  $^{-}4$  and 6 are on a number line?**

- (A)  $|^{-}4 - 6|$   
(B)  $^{-}4 - 6$   
(C)  $|^{-}4 + 6|$   
(D)  $^{-}4 + 6$

**14.  $8 \times 7 + 8 \times (^{-}5) = \square$** 

- (F) 96  
(G)  $^{-}96$   
(H) 16  
(J)  $^{-}16$

**15. Which is not a rational number?**

- (A)  $\frac{^{-}4}{19}$   
(B)  $\frac{^{-}4}{^{-}19}$   
(C)  $\frac{0}{^{-}19}$   
(D)  $\frac{^{-}4}{0}$

**16.  $2 \div ^{-}9 = \square$** 

- (F)  $^{-}0.2$   
(G)  $^{-}0.22$   
(H)  $^{-}0.\overline{2}$   
(J)  $0.\overline{2}$



**MATHEMATICS****● Part 3: Expressions and Equations****Directions:** Choose the best answer for each question.

1. Which expression is equivalent to  $5(3 + 4b)$ ?

(A)  $19b$   
 (B)  $35b$   
 (C)  $15 + 4b$   
 (D)  $15 + 20b$

2. A rectangle has a perimeter of 72 cm and a width of 16 cm. Which expression does not show a way to find the length of the rectangle?

(F)  $2(16) + 2l = 72$   
 (G)  $16l = 72$   
 (H)  $16 + 16 + l + l = 72$   
 (J)  $(2 \times 16) + (2l) = 72$

3. A cab company charges \$2 for a ride plus \$3 per mile. How far is a cab ride that costs less than \$20?

(A) more than 6 miles  
 (B) more than  $6\frac{2}{3}$  miles  
 (C) less than 6 miles  
 (D) less than  $6\frac{2}{3}$  miles

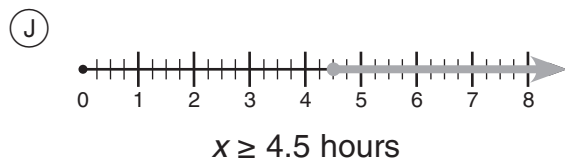
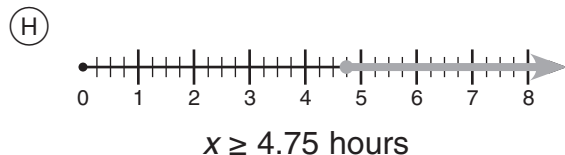
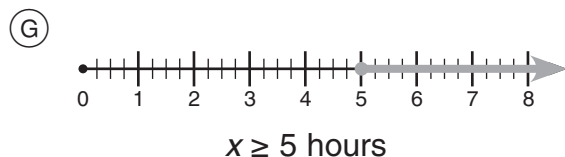
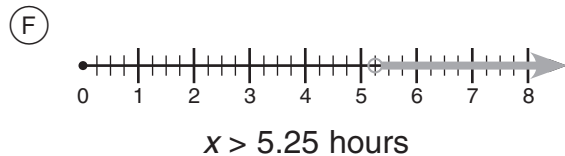
4. Which shows a way to factor  $3x + 27xy$ ?

(F)  $3(x + 27y)$   
 (G)  $3x(x + 9y)$   
 (H)  $3x(1 + 9y)$   
 (J)  $3xy(1 + 9)$

5. Which shows another way to find  $18 \times 48$ ?

(A)  $(20 - 2) \times (50 - 2)$   
 (B)  $20(2 + 28)$   
 (C)  $6(3 \times 8)$   
 (D)  $3(6 \times 16)$

6. Theresa takes a bus to Chicago, which is 225 miles away. The bus does not exceed the speed limit of 60 miles per hour. The bus makes 3 stops on the way for 15 minutes each. Which shows how long the bus trip might take?



**MATHEMATICS****● Part 3: Expressions and Equations (cont.)****Directions:** Choose the best answer for each question.**7. Simplify the expression  $6g + 7g + 9g$ .**

- (A)  $13g$
- (B)  $15g$
- (C)  $16g$
- (D)  $22g$

**8. A diver starts at  $-10$  meters (10 meters below the surface) and descends 2.3 meters per minute. What number represents the depth of the diver after 6 minutes?**

- (F)  $-23.8$  meters
- (G)  $-13.8$  meters
- (H) 3.8 meters
- (J) 13.8 meters

**9. April had 3.8 inches of rain. In May, there was only half as much rain as in April. June had 4 times as much rain as May. How much did it rain in April, May, and June?**

- (A) 10.4 inches
- (B) 11.4 inches
- (C) 12.3 inches
- (D) 13.3 inches

**10. Which is closest to the difference of  $449.25 - (-551.83)$ ?**

- (F)  $-1,000$
- (G)  $-100$
- (H) 1,000
- (J) 100

**11. Rory's goal is to earn \$10 at her lemonade stand. She charges \$0.25 per cup. She has already sold  $n$  cups. Which is an expression for the number of cups she still needs to sell to meet her goal?**

- (A)  $0.25n$
- (B)  $10 - 0.25n$
- (C)  $(10 \div 0.25) - n$
- (D)  $(10 \times 0.25) - n$

**12. A salesperson earns \$45 for every pool that she sells. She also earns a base salary of \$1,800 each month. If she earns \$2,565 in July, how many pools does she sell that month?**

- (F) 17 pools
- (G) 30 pools
- (H) 43 pools
- (J) 57 pools



**MATHEMATICS**

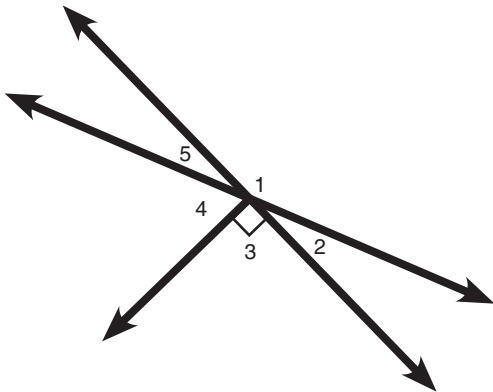
**Part 4: Geometry**

**Directions:** Choose the best answer for each question.

1. The diameter of a circular rug is 14 feet. What is its area?

- (A)  $14\pi$  square feet
- (B)  $49\pi$  square feet
- (C)  $98\pi$  square feet
- (D)  $196\pi$  square feet

2. Which angle is supplementary to  $\angle 5$ ?

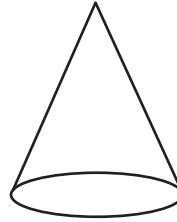


- (F)  $\angle 4$
- (G)  $\angle 2$
- (H)  $\angle 1$
- (J)  $\angle 3$

3. Which set of measures does not make a triangle?

- (A) 3, 5, 6
- (B) 4, 7, 9
- (C) 2, 6, 9
- (D) 5, 5, 8

4. Which figure can be a cross section of a cone?



- (F) square
- (G) circle
- (H) rectangle
- (J) trapezoid

5. A map is drawn at a scale of 1 inch:25 miles. Springfield and Parkdale are 175 miles apart. How far apart are the two cities on the map?

- (A) 3 inches
- (B) 5 inches
- (C) 6 inches
- (D) 7 inches

6. Which measures make only one triangle?

- (F) a  $90^\circ$  angle and a 10-inch hypotenuse
- (G) a 6-inch side, a 9-inch side, and a 12-inch side
- (H) an  $80^\circ$  angle, a  $70^\circ$  angle, and a  $30^\circ$  angle
- (J) two  $65^\circ$  angles and a  $50^\circ$  angle

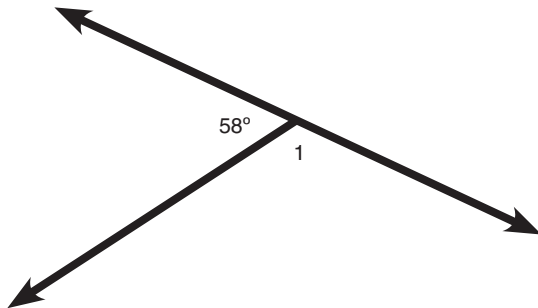


**MATHEMATICS****● Part 4: Geometry (cont.)****Directions:** Choose the best answer for each question.

7. What is the volume of a cube with a side that measures 9 inches?

(A) 81 cubic inches  
 (B) 243 cubic inches  
 (C) 486 cubic inches  
 (D) 729 cubic inches

8. What is the measure of  $\angle 1$ ?



(F)  $32^\circ$   
 (G)  $58^\circ$   
 (H)  $122^\circ$   
 (J)  $148^\circ$

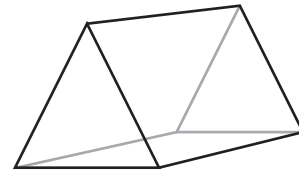
9. A round tablecloth has a circumference of 314 centimeters. What area will the tablecloth cover? (Hint: Use 3.14 for  $\pi$ .)

(A) 3,140 square centimeters  
 (B) 7,850 square centimeters  
 (C) 15,700 square centimeters  
 (D) 31,400 square centimeters

10. A model car is made to the scale 1 inch:16 inches. The tires on the model car are  $1\frac{1}{4}$  inches tall. How tall are the tires on the full-size car?

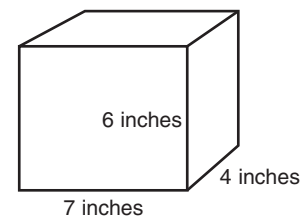
(F) 16 inches  
 (G) 18 inches  
 (H) 20 inches  
 (J) 24 inches

11. What two-dimensional figures make up a triangular prism?



(A) 4 triangles  
 (B) 4 triangles and 2 rectangles  
 (C) 2 triangles and 3 rectangles  
 (D) 6 rectangles

12. What is the surface area of this figure?



(F) 168 square inches  
 (G) 188 square inches  
 (H) 208 square inches  
 (J) 228 square inches



**MATHEMATICS****● Part 5: Statistics and Probability****Directions:** Choose the best answer for each question.

1. What is the probability of rolling 3 on a standard die?

(A)  $\frac{3}{6}$   
(B)  $\frac{1}{5}$   
(C)  $\frac{1}{6}$   
(D)  $\frac{5}{6}$

2. Which is most likely to be an unbiased 100-person sample of the population of a state?

(F) 10 students randomly chosen from 10 classrooms in one school  
(G) 100 randomly chosen people leaving a grocery store  
(H) 10 people randomly chosen from 10 randomly selected towns in the state  
(J) 100 people randomly chosen at a state fair

3. A spinner with 5 equal sections labeled A–E is spun 85 times. About how many times would you expect to spin a vowel?

(A) 17  
(B) 34  
(C) 51  
(D) 85

4. An ice cream shop sells chocolate ice cream to 6 of 20 customers. What is the probability that the next customer buys chocolate ice cream?

(F)  $\frac{1}{4}$   
(G)  $\frac{1}{5}$   
(H)  $\frac{3}{10}$   
(J)  $\frac{3}{8}$

5. How many outcomes are possible when rolling a standard die and flipping a coin?

(A) 2  
(B) 6  
(C) 8  
(D) 12

6. Which describes the probability of picking the letter *q* from the word *probability*?

(F) impossible  
(G) likely  
(H) unlikely  
(J) certain



## MATHEMATICS

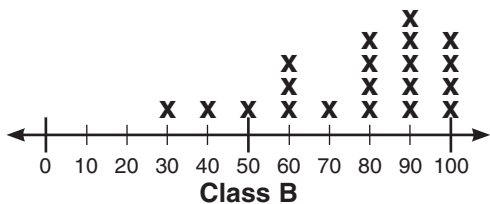
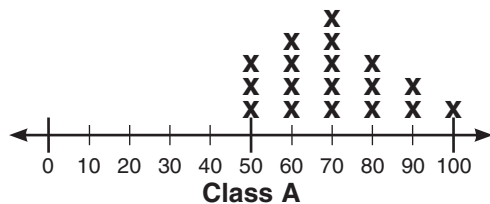
### ● Part 5: Statistics and Probability (cont.)

**Directions:** Choose the best answer for each question.

7. Felix rolls two standard dice. What is the probability that the sum of the numbers rolled is a multiple of 3?

- (A)  $\frac{1}{2}$
- (B)  $\frac{1}{3}$
- (C)  $\frac{1}{4}$
- (D)  $\frac{1}{6}$

8. Look at two line plots showing scores on a test given in two classes. Which statement is true?



- (F) The scores of class A are always higher than the scores of class B.
- (G) The mean score of class A is greater than the mean score of class B.
- (H) The scores of class B vary more than the scores of class A.
- (J) The median score of class A is greater than the median score of class B.

9. Look at the table. Which statement is not true about the distances the balls are thrown?

Softball throw (feet)	97	68	110	153	84	92	108	93	79	52
Baseball throw (feet)	185	129	208	295	138	187	196	175	153	98

- (A) The mean distance is greater for the baseball throw than for the softball throw.
- (B) The distance thrown is greater for all baseball throws than for all softball throws.
- (C) The range in distances is greater for the baseball throw than for the softball throw.
- (D) The median distance is greater for the baseball throw than for the softball throw.

10. Which word best describes the probability of rolling a prime number on a cube with sides labeled 2–7?

- (F) impossible
- (G) unlikely
- (H) likely
- (J) certain





**MATHEMATICS****● Part 5: Statistics and Probability (cont.)****Directions:** Choose the best answer for each question.

11. What is the probability of choosing the letter *i* when choosing one letter from the word *probability*?

(A)  $\frac{1}{11}$   
(B)  $\frac{2}{11}$   
(C)  $\frac{4}{11}$   
(D)  $\frac{9}{11}$

12. Look at the list of points scored by one basketball team in randomly selected games. How many points would you expect the team to score in its next game?

56, 78, 75, 69, 49, 72, 64, 78, 82, 58, 66, 68

(F) 82  
(G) 49  
(H) 68  
(J) 78

13. Use the scores from number 12. How does the mode of the scores relate to the median of the scores?

(A) They are about the same.  
(B) The median is greater than the mode.  
(C) The mode is greater than the median.  
(D) There is no mode.

14. At a sandwich shop, 18 out of the last 20 customers ordered a drink. What is the probability that the next customer will order a drink?

(F)  $\frac{1}{10}$   
(G)  $\frac{1}{5}$   
(H)  $\frac{4}{5}$   
(J)  $\frac{9}{10}$

15. If a spinner labeled A–D is spun 60 times, what is the best prediction for how many times it will land on C?

(A) 12  
(B) 20  
(C) 10  
(D) 15

16. Jacqueline chooses a card from a deck of 24 cards numbered 1–24. Then, she chooses a second card without replacing the first card. What is the probability that she has chosen two cards numbered less than 10?

(F)  $\frac{3}{23}$   
(G)  $\frac{2}{24}$   
(H)  $\frac{15}{92}$   
(J)  $\frac{9}{46}$



# ANSWER KEY

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5. B
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15. D
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