

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

## **Comprehensive Practice Test**

# **Minnesota Edition**

## **Grade 7**

The state of Minnesota has adopted the Common Core State Standards in English Language Arts only. For more information about Minnesota mathematics standards, use the links provided below.

In addition to the Common Core English Language Arts standards, Minnesota has adopted state-specific standards that make up no more than 15% of the total. Some items on this practice test are based on these state-specific standards. These questions are identified by a black circle around the item number, as shown below.

**1.** = Minnesota Standards Question

In seventh grade, Minnesota's standards encourage students:

- To read literature by or about Minnesota American Indians.
- To understand multiple perspectives and viewpoints through wide reading.
- To use a writing process, including drafting.

For more information:

Common Core State Standards Initiative:

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

Minnesota Department of Education K–12 Academic Standards:

<http://education.state.mn.us/MDE/EdExc/StanCurri/K-12AcademicStandards/index.htm>

**MINNESOTA EDITION**  
**Grade 7 Comprehensive Practice Test**  
**COMMON CORE ENGLISH LANGUAGE ARTS**

● **Part 1: Reading Literature**

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

### ***Why Blackfeet Never Kill Mice***

A Blackfoot boy and his grandmother were gathering wood when they came to an old buffalo skull in a grove of cottonwood trees near the river. As they approached, two mice scampered inside. The boy found a stick and was about to turn the skull over and kill the mice. Sharply, his grandmother said, “No, our people never harm mice. Your grandfather will tell you why. The mice-people are our friends and we treat them as such. Remember, even small people can be good friends.”

That night, the boy went with others to War Eagle’s lodge to hear stories. He asked, “Grandfather, why must we never kill mice-people? Grandmother said you knew.”

“Yes,” replied War Eagle. “I know and so must you. Mice-people should be let alone and allowed to do as they please, for we owe them much more than we can ever repay. They are great people, as you will see.

“Long ago, few men and women walked in the world. The animal-people and bird-people were more powerful than our people, because we were young and not wise.

“All the animals and birds wanted to be chief, second in charge under Old-man. Bear wanted to be chief, and so did Beaver. So did many other creatures. Each night, they held a council and quarreled over it. The feuding continued until one night when Old-man came along.

“Old-man listened to each creature. He declared, ‘I will settle this once and for all.’ He opened his paint sack and took out a small, polished bone. This he held in the firelight for all to see.

“Old-man held the bone in his right hand. He switched it to his left hand. He began to sing a lighthearted song and to slip the bone from one hand to the other in rapid succession until the creatures were puzzled. Finally, he stopped singing and held out his hands, both shut tight.

“‘Which of my hands holds the bone now?’ he asked.

“Bear wagered a guess, but when Old-man opened that hand, it was empty. Everyone mocked Bear. Old-man smiled and again began to sing and pass the bone.

“Old-man said, ‘Beaver, you are smart. Name the hand that holds the bone this time.’

“Beaver said, ‘It is your right hand. I saw you put it there.’ Old-man opened that hand, but the bone was nowhere in sight. Again, everyone laughed, especially Bear.

“Old man said, ‘I will teach you all to play the game; when you have mastered it, continue



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

to play until you determine who is cleverest at the game. That creature shall be chief under me forever.’

“The animals learned to play with cunning. Beaver prevailed over Bear easily. Buffalo bested Beaver and started to play with Mouse. Mouse used her small hands well, and won.

“It was a fair game. All acknowledged that Mouse had won and was chief. She looked small among the rest, but walked to the center of the council and said:

“Brothers and sisters, what is mine to keep is mine to relinquish. I cannot be chief. I am small and not warlike. I want to live in peace with my family. I give away my right to be chief to the human-people that Old-man has made like himself.’

“That made human-people chief forever, greater than the animals and birds. That is why we never kill the mice-people. And that is why, ever since that night, mice-people have made their nests in the heads of the dead buffalo-people.”

War Eagle continued, “Our people still play the bone game today.” He took from his paint sack a small polished bone and sang just as Old-man did so long ago. The people played and laughed long into the night. Like the animals, they always guessed wrong. Laughing loudest of all, War Eagle said, “Now go to your beds and come see me tomorrow night. Ho!”

**1. Why do mice-people nest inside the skull bones of dead buffaloes?**

- (A) to show that they are, and have always been, chief over all other creatures
- (B) because, long ago, Old-man gave the mice-people permission to do this
- (C) because human-people gave mice-people this privilege in exchange for the right to be chief
- (D) because Mouse beat Buffalo at the bone game long ago

**2. After human-people became chief, how do you think Mouse and her people felt about giving up power?**

- (F) remorseful
- (G) contented
- (H) envious
- (J) oppressed

**3. How is the theme best stated?**

- (A) Humans are superior to all other creatures.
- (B) It is important to remember and respect the power of small creatures.
- (C) Gaining power and leadership is the most important honor.
- (D) Competing at games is a good way to make decisions.

**4. Mouse decides to relinquish what she has won. What does *relinquish* mean?**

- (F) to trade
- (G) to give up
- (H) to protect
- (J) to elaborate



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

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

**5. Which is the most unbiased summary of the story?**

- (A) Mouse won the bone game and was the rightful chief. Because she was meek and peaceful, she would have made a better chief than the human-people.
- (B) Old-man teaches the creatures a bone game and declares the winner to be chief. His plan does not work out very well.
- (C) Old-man teaches the animals a bone game and declares the winner, Mouse, to be chief. Although small Mouse willingly gives up her power to humans, the humans never forget to honor the mice-people.
- (D) Bear wants to be chief, but his paws are too large to play the bone game well and win the title. Powerful Bear is cheated out of his right to be chief.

**6. Mouse decides not to be chief**

- (F) because she is tired of playing the bone game.
- (G) because she has thought of several reasons why the position would not suit her.
- (H) because the human-people are like Old-man.
- (J) because she is smaller than all the other animals.

**7. Which words give the description of the bone game and its players a fun and positive tone?**

- (A) polished, lighthearted, cunning
- (B) puzzled, mocked, fair
- (C) paint sack, bone, rapid
- (D) laughed, empty, sing

**8. Why does War Eagle say that the mice-people should be left alone?**

- (F) because they might change their minds about being chief
- (G) because they are cunning
- (H) because they are more powerful than the bears and buffaloes
- (J) because they once honored humans and so humans must honor them

**9. Who tells the story about Old-man and the bone game challenge?**

- (A) War Eagle's wife
- (B) War Eagle
- (C) the Blackfoot boy
- (D) Mouse

**10. This story explains why the Blackfeet never harm mice. Another story in this genre might be about**

- (F) the life of a modern-day Blackfoot teenager.
- (G) why bears hibernate.
- (H) the daughter of a famous Blackfoot chief.
- (J) using clues from an ancient game to solve a mystery.



**COMMON CORE 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.



**COMMON CORE 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



**COMMON CORE 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





**COMMON CORE 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





**COMMON CORE 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?

	<b>Yes</b>	<b>No</b>
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?

	<b>Yes</b>	<b>No</b>
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?

	<b>Yes</b>	<b>No</b>
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"/>



**COMMON CORE 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



**COMMON CORE 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.



**COMMON CORE 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



**COMMON CORE 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**

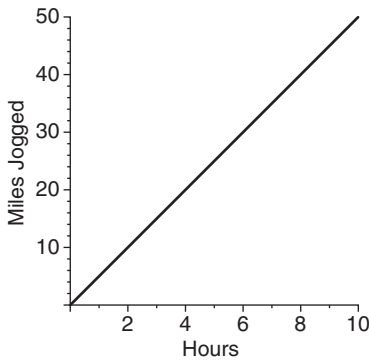
**● Part 1: Ratios and Proportional Relationships (cont.)**

**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?

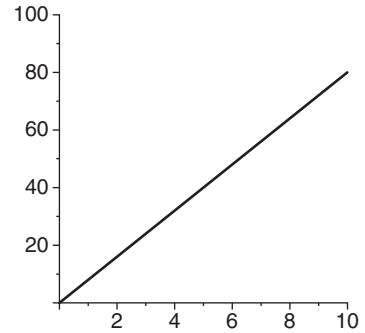


- (F) 30 miles jogged in 6 hours
- (G) 6 miles jogged in 30 hours
- (H) 30 miles jogged in 6 days
- (J) 30 days of jogging 6 miles each day

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

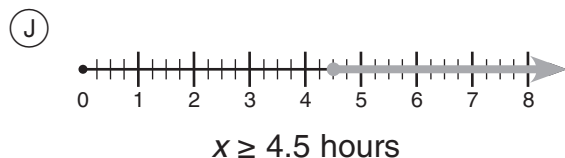
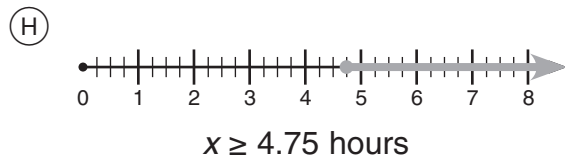
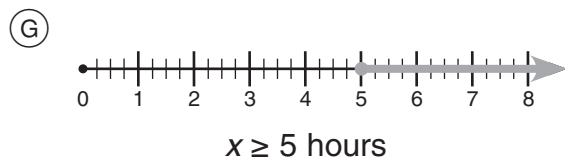
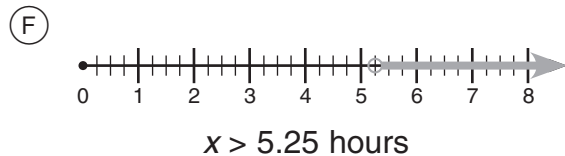
4. Which shows a way to factor  $3x + 27xy$ ?

(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

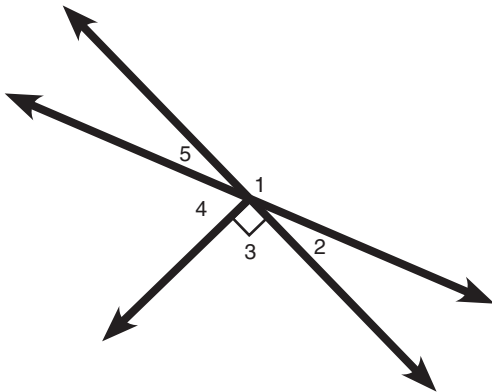


**MATHEMATICS****● Part 4: Geometry****Directions:** Choose the best answer for each question.

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  $\angle 5$ ?

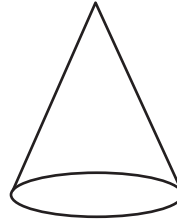


(F)  $\angle 4$   
 (G)  $\angle 2$   
 (H)  $\angle 1$   
 (J)  $\angle 3$

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

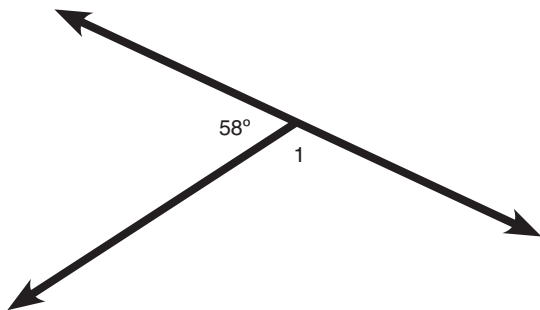


**MATHEMATICS****● Part 4: Geometry (cont.)****Directions:** Choose the best answer for each question.

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)  $148^\circ$

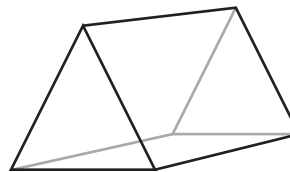
9. A round tablecloth has a circumference of 314 centimeters. What area will the tablecloth cover? (Hint: Use 3.14 for  $\pi$ .)

(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?

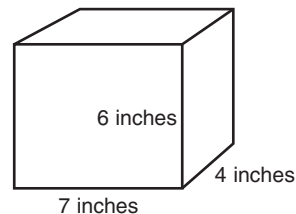
(F) 16 inches  
 (G) 18 inches  
 (H) 20 inches  
 (J) 24 inches

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**

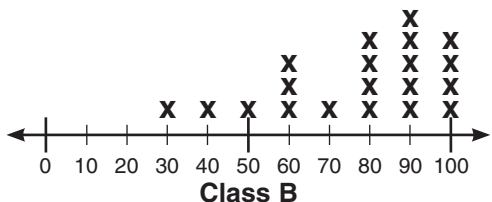
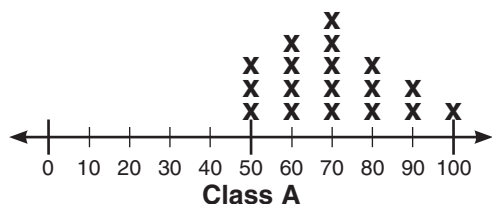
**Part 5: Statistics and Probability (cont.)**

**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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