



# **RELEASED ITEMS**

**MATHEMATICS  
GRADE 7**

**Fall 2006**

**MICHIGAN STATE BOARD OF EDUCATION  
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# PART 1

## DIRECTIONS

This test has three parts. You may **NOT** use a calculator on the first part. You may use open space in this test booklet for scratch paper. No additional sheets may be used.

**There is one type of item on this test: multiple-choice.**

Multiple-choice items will require you to choose the best answer from among four answer choices. For these items, use only a No. 2 pencil to mark your answer in your **Answer Document**. If you erase an answer, be sure to erase it completely. If you skip an item, be sure to mark the answer to the next item in the correct place in your **Answer Document**.

### Sample Multiple-Choice Item:

Marty wants to put 75 CDs into cases. Each case holds exactly 8 CDs. What is the *least* number of cases that Marty will need to hold all his CDs?

- A 8
- B 9
- C 10
- D 11

For this sample item, the correct answer is **C**. Circle **C** is filled in on the sample item in your **Answer Document**.

You will have at least 30 minutes to finish Part 1 of this test. You will be given additional time if necessary.

- 1 Bill buys  $5\frac{3}{4}$  pounds of meat for hamburgers. Each hamburger takes  $\frac{1}{4}$  pound of meat. If Bill uses all of the meat, how many hamburgers can he make?

- A 6
- B 23
- C 60
- D 92

- 2 What number goes in the box to make the equation true?

$$\frac{3}{4} \div \frac{3}{2} = \square$$

- A  $\frac{1}{2}$
- B  $\frac{9}{8}$
- C  $\frac{9}{4}$
- D 2

- 3 One-half of the students in Jack's class are girls. One-third of the girls have blue eyes. What fraction of the students in Jack's class are blue-eyed girls?

A  $\frac{1}{6}$

B  $\frac{1}{5}$

C  $\frac{1}{3}$

D  $\frac{2}{3}$

- 4 Mr. and Mrs. Plott and their 4 children share cell phone minutes. Mr. and Mrs. Plott together use  $\frac{1}{2}$  of the minutes, and the rest are used equally among the 4 children. What fraction of the minutes does each child use?

A  $\frac{1}{12}$

B  $\frac{1}{8}$

C  $\frac{1}{4}$

D  $\frac{3}{2}$

- 
- 5 Rick spends  $\frac{3}{4}$  of his money buying 2 gifts. If Rick spends an equal amount on each gift, what fraction of his money does he spend on each gift?
- A  $\frac{1}{8}$
- B  $\frac{1}{4}$
- C  $\frac{3}{8}$
- D  $\frac{1}{2}$
- 6 Ray walked  $\frac{1}{4}$  of the way around a track. He then ran  $\frac{3}{8}$  of the way around the track. Over what fraction of the track did Ray travel?
- A  $\frac{1}{8}$
- B  $\frac{3}{32}$
- C  $\frac{4}{12}$
- D  $\frac{5}{8}$

## PART 2

### DIRECTIONS

You will now begin Part 2 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper. No additional sheets may be used.

If you finish early, you may check your work for Part 2 **ONLY**.

Do **NOT** look at items in other parts of this test.

You will have at least 50 minutes to finish Part 2 of this test.

7 If  $\square \div \frac{6}{12} = \frac{3}{4}$  is true, then which of these number sentences is also true?

A  $\frac{3}{4} - \frac{6}{12} = \square$

B  $\frac{6}{12} \times \frac{3}{4} = \square$

C  $\frac{3}{4} \div \frac{6}{12} = \square$

D  $\frac{6}{12} \div \frac{3}{4} = \square$

8 If  $\frac{1}{4} \times \square = \frac{2}{12}$  is true, which of these number sentences is also true?

A  $\frac{1}{4} \div \frac{2}{12} = \square$

B  $\frac{2}{12} \div \frac{1}{4} = \square$

C  $\frac{2}{12} \times \frac{1}{4} = \square$

D  $\frac{1}{4} - \frac{2}{12} = \square$

9 If  $\frac{1}{2} \times \square = \frac{3}{8}$  is true, then which of these number sentences is also true?

A  $\frac{3}{8} \div \frac{1}{2} = \square$

B  $\frac{1}{2} \div \frac{3}{8} = \square$

C  $\frac{3}{8} \times \frac{1}{2} = \square$

D  $\frac{1}{2} - \frac{3}{8} = \square$

10 Daniel has  $\frac{2}{3}$  yard of string. He needs pieces that are  $\frac{1}{6}$  yard long. Which of the following can be used to find the number of pieces of this length that Daniel can cut from his string?

A  $\frac{2}{3} \div \frac{1}{6}$

B  $\frac{2}{3} \times \frac{1}{6}$

C  $\frac{1}{6} \div \frac{2}{3}$

D  $\frac{2}{3} - \frac{1}{6}$

- 11 Mary's Diner has  $\frac{9}{12}$  of an apple pie. Which of the following can be used to find the number of slices Mary can serve if each slice is  $\frac{1}{12}$  of the whole pie?

A  $\frac{9}{12} \times \frac{1}{12}$

B  $\frac{9}{12} - \frac{1}{12}$

C  $\frac{1}{12} \div \frac{9}{12}$

D  $\frac{9}{12} \div \frac{1}{12}$

- 12 José is filling bottles with perfume. Each bottle holds  $\frac{1}{2}$  ounce. He has 12 ounces of perfume. Which of the following can be used to find how many bottles José can fill exactly?

A  $\frac{12}{1} \times \frac{1}{2}$

B  $\frac{1}{12} \times \frac{1}{2}$

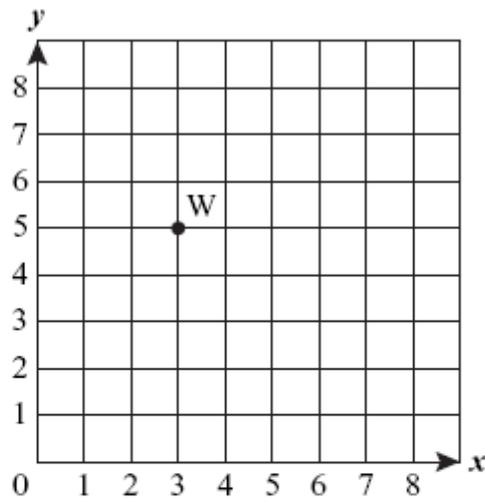
C  $\frac{1}{12} \div \frac{1}{2}$

D  $\frac{12}{1} \div \frac{1}{2}$

- 
- 13 Lisa saves \$2 of every \$5 she earns. Lisa earned \$55 last week. How much should Lisa have saved from her earnings last week?
- A \$11
  - B \$20
  - C \$22
  - D \$33
- 14 Esther's car used 2 gallons of gasoline during a 54-mile trip. Which of the following is an equivalent ratio of gallons to miles?
- A 4 gallons during a 27-mile trip
  - B 8 gallons during a 216-mile trip
  - C 16 gallons during a 68-mile trip
  - D 32 gallons during a 136-mile trip
- 15 The ratio of red flowers to blue flowers in Julie's garden is 3:2. Which ratio is equivalent to 3:2?
- A 24:8
  - B 24:12
  - C 24:16
  - D 24:20
- 16 A train travels 66 miles in 60 minutes. At this constant rate, how long does it take for the train to travel 22 miles?
- A 3 minutes
  - B 20 minutes
  - C 22 minutes
  - D 88 minutes

- 17 Jan washes 24 dishes in 30 minutes. What is this rate in dishes per minute?
- A 0.8 dishes per minute
  - B 1.25 dishes per minute
  - C 6 dishes per minute
  - D 48 dishes per minute
- 18 Yolanda and Heidi each take a walk. Yolanda walks at a speed of 4 miles per hour. Heidi walks at a speed of 2 miles per hour. The girls each walk for  $1\frac{1}{2}$  hours. How many miles further does Yolanda walk than Heidi?
- A  $1\frac{1}{2}$  miles
  - B 2 miles
  - C 3 miles
  - D  $3\frac{1}{2}$  miles

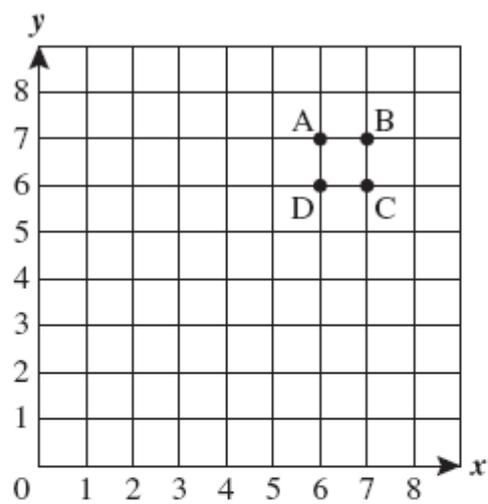
19 Look at the coordinate grid below.



What appear to be the coordinates of point W?

- A (3, 5)
- B (5, 3)
- C (4, 6)
- D (3, 6)

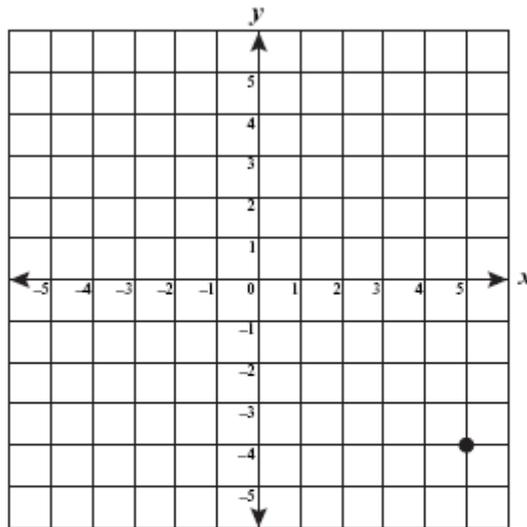
20 Look at the coordinate grid below.



Which point appears to have coordinates (7, 6)?

- A A
- B B
- C C
- D D

21 What appear to be the coordinates of the point plotted below?



- A (5, 4)
- B (5, -4)
- C (4, 5)
- D (-4, 5)
- 22 Mary has 3 times as many baseball cards as Tom. If  $t$  represents the number of cards that Tom has, which of the following *best* represents the number of cards Mary has?
- A  $t + 3$
- B  $t - 3$
- C  $3t$
- D  $\frac{t}{3}$

- 23 Henry is  $h$  years old. Frank is 15 years older than 2 times Henry's age. Which of the following can be used to find Frank's age?
- A  $2h$
  - B  $h + 2(15)$
  - C  $2h + 15$
  - D  $2h - 15$
- 24 Allen and Tim are counting pennies. Together the boys have a total of 50 pennies. If  $a$  represents the number of pennies Allen has, which of the following represents the number of pennies that Tim has?
- A  $a + 50$
  - B  $a - 50$
  - C  $50a$
  - D  $50 - a$
- 25 Kelly has two brothers who weigh a total of 191 pounds. In the number sentence  $x + y = 191$ , what does  $y$  represent?
- A Kelly's weight
  - B the weight of one of Kelly's brothers
  - C the total weight of Kelly's two brothers
  - D the total weight of all three siblings

- 26 When Halley gets up in the morning, the house is 8 degrees colder than it was the night before. Which of the following can be used to find the temperature in the morning when the temperature the night before is  $n$ ?

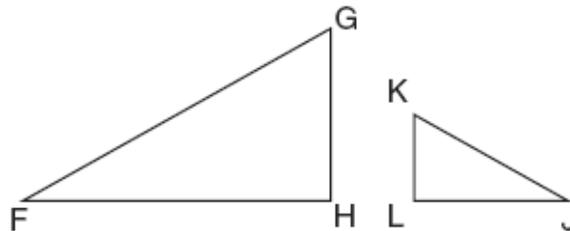
A  $n + 8$   
B  $n - 8$   
C  $8n$   
D  $8 - n$

- 27 Which statement can be correctly represented by the number sentence below?

$$9 \times (79 - 47) = ?$$

A The number of pages to be copied is 9 times 79 plus 47.  
B The total cost is 9 times the sum of 79 and 47.  
C The number of buttons needed was 9 times 79 minus 47.  
D The amount of money saved was 9 times the difference of 79 and 47.

- 28 In the figure below  $\triangle FGH$  is similar to  $\triangle JKL$ .



Which angle must be congruent to  $\angle G$ ?

A  $\angle F$   
B  $\angle L$   
C  $\angle J$   
D  $\angle K$

- 29 If three angles of a triangle are congruent to the three angles of another triangle, which of the following is true?
- A The triangles cannot be congruent.
  - B The two triangles must be congruent.
  - C The two triangles may be congruent, but only if the triangles are right triangles.
  - D The two triangles may be congruent, depending on whether corresponding sides are equal in length.
- 30 Which of the following statements about congruent polygons *must* be true?
- A If the side of a square is equal in length to the side of another square, the squares are congruent.
  - B If the length of a rectangle is equal to the length of another rectangle, the rectangles are congruent.
  - C If the hypotenuse of a right triangle is equal in length to the hypotenuse of another right triangle, the triangles are congruent.
  - D If two sides of a triangle are the same length as the corresponding sides of another triangle, the triangles are congruent.
- 31 A jar holds 4 red marbles and 3 green marbles. What is the probability of selecting a red marble at random?
- A  $\frac{1}{4}$
  - B  $\frac{4}{7}$
  - C  $\frac{4}{4}$
  - D  $\frac{4}{3}$

- 32 Fourteen out of 20 students in Mrs. Taylor’s class wore red today. What is the probability that a student selected at random is wearing red?
- A 14%
  - B 34%
  - C 60%
  - D 70%
- 33 An apartment complex is offering a raffle with a 1 in 50 probability of winning a car. Which number represents the probability of winning a car?
- A 0.02
  - B 0.15
  - C 1.50
  - D 50

## PART 3

### DIRECTIONS

You will now begin Part 3 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper. No additional sheets may be used.

If you finish early, you may check your work for Part 3 **ONLY**.

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You will have at least 50 minutes to finish Part 3 of this test.

- 34 Amy's allowance is being increased by 15% next year. If she currently gets \$12 per week, how much will she get for an allowance next year?
- A \$13.80 per week
  - B \$15.00 per week
  - C \$18.00 per week
  - D \$27.00 per week
- 35 Fritz has a total of 1,240 stamps in his stamp collection. Only 20% of his collection is from foreign countries; the rest is from the United States. Which number sentence can be used to find the number of United States stamps in Fritz's collection?
- A  $1,240 \times 0.2 = 248$
  - B  $1,240 - 1,240 \times 0.2 = 992$
  - C  $1,240 + 1,240 \times 0.2 = 1,488$
  - D  $1,240 \times 20 - 1,240 = 23,560$

- 36 The following table shows recommended values of some food components in a healthy diet. This data is based on adults and children over the age of 4 consuming 2,000 calories per day.

**Daily Reference Values  
(DRVs)**

Food Component	DRV
Fat	65 grams (g)
Total carbohydrate	300 g
Fiber	25 g
Sodium	2,400 mg
Potassium	3,500 mg
Protein	50 g

- If one gram of fat contains close to 9 calories, which is closest to the percent of daily calories that should come from fat?
- A** 9%
- B** 14%
- C** 29%
- D** 33%
- 37 Emily wants to cut a string into 4 pieces of equal length. The string is 13 inches long. Which of the following is the *best* estimate of how long each piece will be?
- A** 3 inches
- B** 4 inches
- C** 9 inches
- D** 17 inches

- 38 A car is traveling at the rate of 60 miles per hour. Which of the following is *closest* to how long it will take the car to travel 178 miles?
- A 2 hours
  - B  $2\frac{1}{2}$  hours
  - C 3 hours
  - D  $3\frac{1}{2}$  hours
- 39 Mr. Ellis's dinner bill was \$26.65. He gave the waiter an additional 15% of the bill for a tip. Which of the following is *closest* to the amount he gave the waiter for the tip?
- A \$3.00
  - B \$4.00
  - C \$5.00
  - D \$6.00
- 40 Donna has \$2.50. She buys 5 pencils for \$0.15 each and one notepad for \$1.75, tax included. How much money does she have left?
- A \$0.00
  - B \$0.60
  - C \$1.75
  - D \$2.50

- 41 A group of 5 friends split the cost of 2 pizzas. Each pizza cost \$11.00, tax included. How much did each friend pay?
- A \$2.20  
B \$2.75  
C \$4.40  
D \$5.50
- 42 The Good 'N' Clean Company sells laundry detergent in four different-sized bottles. The sizes and prices are shown in the table below.

Laundry Detergent Prices

Size	Price	Volume (fluid ounces)
Small	\$0.80	16
Medium	\$1.20	30
Large	\$3.84	64
Super	\$4.50	100

Which size costs the *least* per fluid ounce?

- A small  
B medium  
C large  
D super

43 What is the value of  $-3.21 + 3.21$ ?

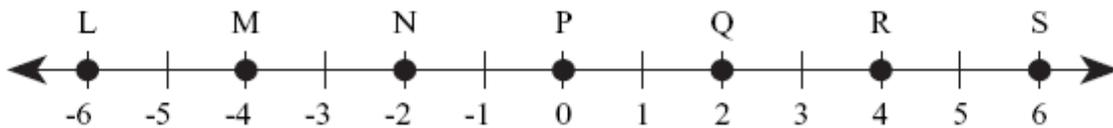
- A -6.42
- B 0
- C 3.21
- D 6.24

44 Which point appears to be at  $-4.1$  on the number line?



- A Point A
- B Point B
- C Point C
- D Point D

45 Which two points on the number line appear to have values that have a sum of zero?



- A Point L and Point P
- B Point N and Point Q
- C Point N and Point S
- D Point P and Point Q

- 46 Barry and Shin are playing a board game. Barry has 30 points. The number of points that Shin has,  $s$ , can be represented by the following:

$$s + 5 = 30$$

How many points does Shin have?

- A 6 points
  - B 25 points
  - C 35 points
  - D 150 points
- 47 Hector and Tony both collect baseball cards. Hector has 28 cards. The number of cards owned by Tony,  $t$ , can be represented by the following:

$$2t = 28$$

How many cards does Tony own?

- A 14 cards
  - B 26 cards
  - C 30 cards
  - D 56 cards
- 48 On Saturday, Mark ran 3 times the distance that he ran on Wednesday. On Saturday he ran 12 kilometers. The distance Mark ran on Wednesday,  $w$ , can be represented by the following:

$$12 = 3w$$

How many kilometers did Mark run on Wednesday?

- A 4 kilometers
- B 9 kilometers
- C 15 kilometers
- D 36 kilometers

49 Which value for  $x$  correctly solves this number sentence?

$$x + 10 = 9$$

- A  $x = -10$
- B  $x = -1$
- C  $x = 1$
- D  $x = 19$

50 Which number sentence has the same solution as  $x + 6 = 3$ ?

- A  $x = -3$
- B  $x = 3$
- C  $x = 6$
- D  $x = 9$

51 Which value for  $x$  correctly solves this number sentence?

$$x - 5 = -3$$

- A  $x = -8$
- B  $x = -2$
- C  $x = 2$
- D  $x = 8$

52 Which number sentence has the same solution as  $\frac{x}{2} = 5$ ?

A  $x = \frac{5}{2}$

B  $x = 5$

C  $x = 10$

D  $x = 20$

53 Which value for  $y$  correctly solves this number sentence?

$$\frac{y}{3} = 15$$

A  $y = 5$

B  $y = 12$

C  $y = 18$

D  $y = 45$

54 Which value for  $y$  correctly solves this number sentence?

$$2y = 21$$

A  $y = \frac{2}{21}$

B  $y = \frac{21}{2}$

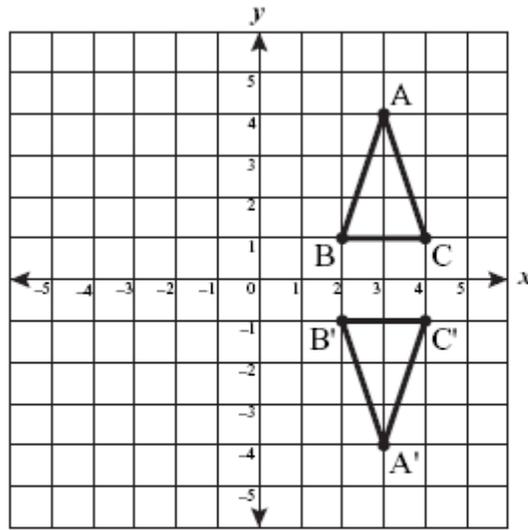
C  $y = 19$

D  $y = 23$

- 55 John needs 270 square feet of carpet. The carpet is sold by the square yard. How many square yards of carpet does John need? (*1 square yard = 9 square feet*)
- A 15 square yards
  - B 18 square yards
  - C 30 square yards
  - D 90 square yards
- 56 A slice of bread weighs one ounce. A loaf of bread contains 32 slices. Not counting the wrapper, how much does the loaf of bread weigh, in pounds? (*1 pound = 16 ounces*)
- A 1.0 pound
  - B 2.0 pounds
  - C 3.2 pounds
  - D 4.0 pounds
- 57 A recipe calls for a pint of milk. Harold is making 4 times the amount called for by the recipe. How much milk, in quarts, does Harold need? (*1 quart = 2 pints*)
- A  $\frac{1}{2}$  quart
  - B 1 quart
  - C 2 quarts
  - D 4 quarts

58 What transformation occurs when  $\triangle ABC$  becomes  $\triangle A'B'C'$ ?

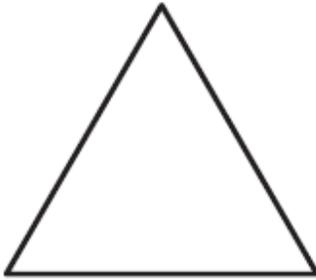
Triangles ABC and A'B'C'



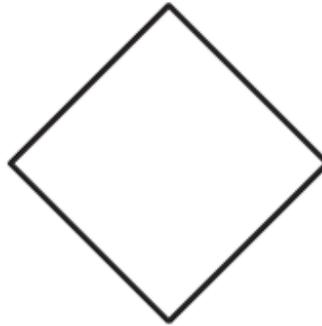
- A  $\triangle ABC$  is reflected over the  $x$ -axis.
- B  $\triangle ABC$  is reflected over the  $y$ -axis.
- C  $\triangle ABC$  is rotated  $180^\circ$  around the origin.
- D  $\triangle ABC$  is rotated  $360^\circ$  around the origin.

59 Which object below can be rotated 90 degrees about its center and have its final orientation appear the same as the original orientation?

A



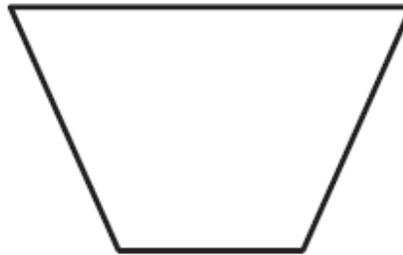
B



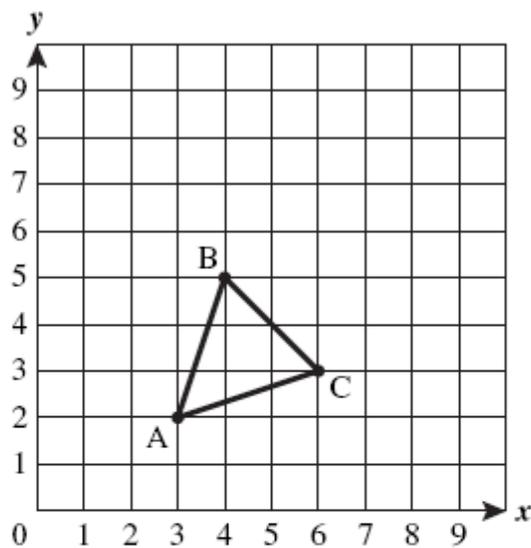
C



D



60 Look at the figure below.



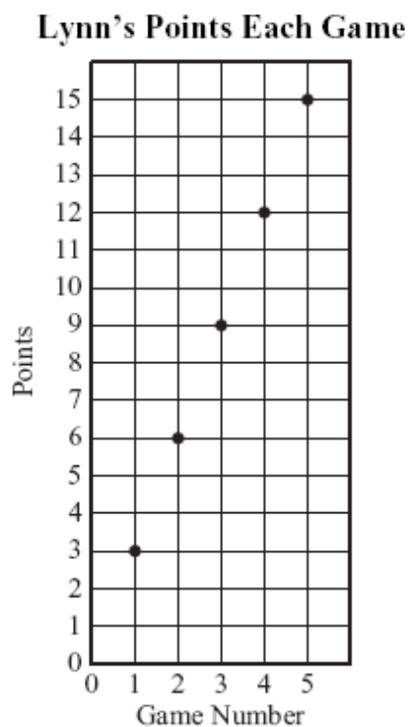
Triangle ABC is translated left 2 units. What are the coordinates of the image of point C?

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

61 Which of the following is an algebraic expression?

- A  $y = 2$
- B  $3x + 2y$
- C  $y = 3x + 2$
- D  $y + 2 = x - 5$

62 Lynn plays on the basketball team. The graph below shows how many points Lynn scores in each of the first five games of the season.



Which statement best describes the relationship between the number of points scored by Lynn in each game and in the game before?

- A Lynn scores twice as many points each game as the game before.
- B Lynn scores two more points each game than she did the game before.
- C Lynn scores three more points each game than she did the game before.
- D Lynn scores three fewer points each game than she did the game before.

63 What is the probability of randomly selecting 1 blue marble from a bag of 4 blue marbles and 7 red marbles?

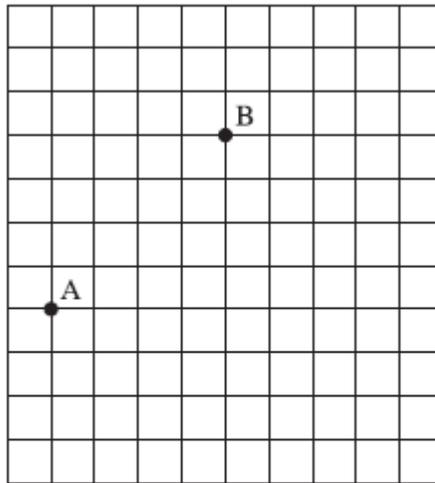
A  $\frac{1}{4}$

B  $\frac{1}{11}$

C  $\frac{4}{7}$

D  $\frac{4}{11}$

64 Where is point B relative to point A?

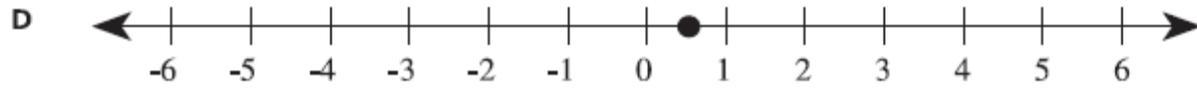
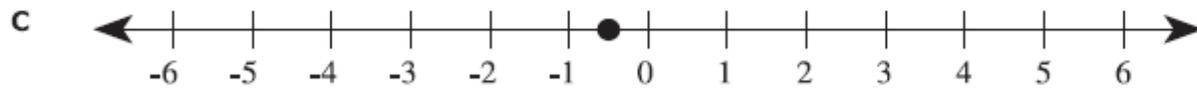
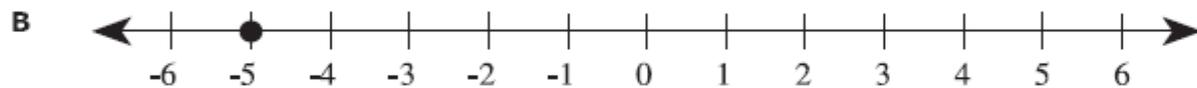
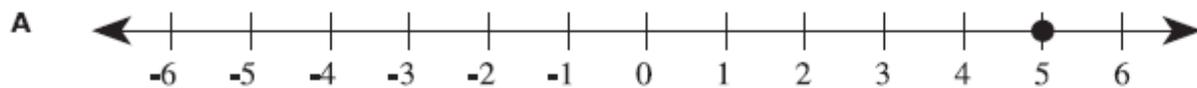


- A Point B is 5 units from point A.
- B Point B is 7 units from point A.
- C Point B is 4 units to the right and 4 units up relative to point A.
- D Point B is 4 units to the left and 4 units down relative to point A.

65 What is 15% of 87?

- A 5.8
- B 13.05
- C 72
- D 1,305

66 Which is a correct graph of the number -5?



67 Which decimal number is equivalent to  $\frac{32}{1,000}$  ?

- A 0.003
- B 0.032
- C 0.302
- D 0.320

68 Which of the following is **NOT** a rational number?

- A  $\sqrt{3}$
- B  $-27$
- C  $0.\overline{64}$
- D  $\frac{5}{4}$

69 Which of the following sets contains a negative integer?

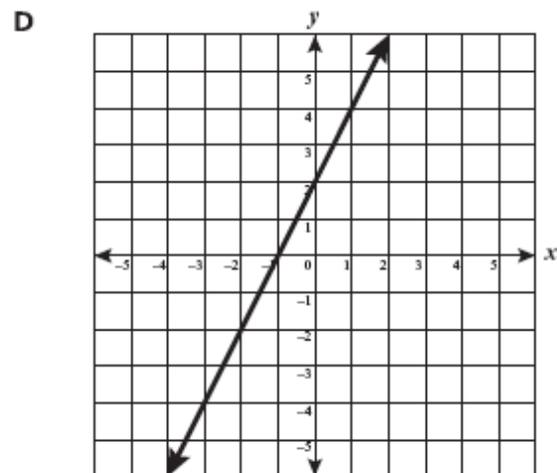
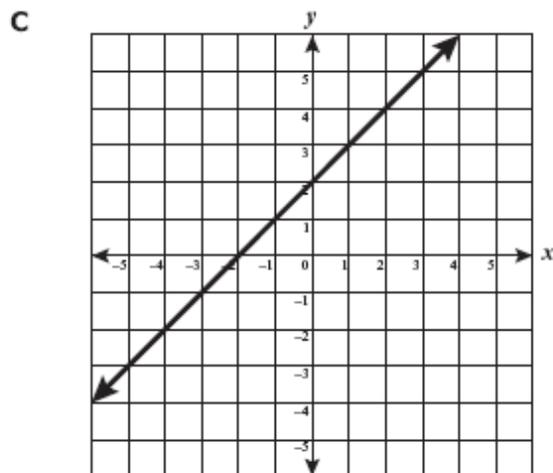
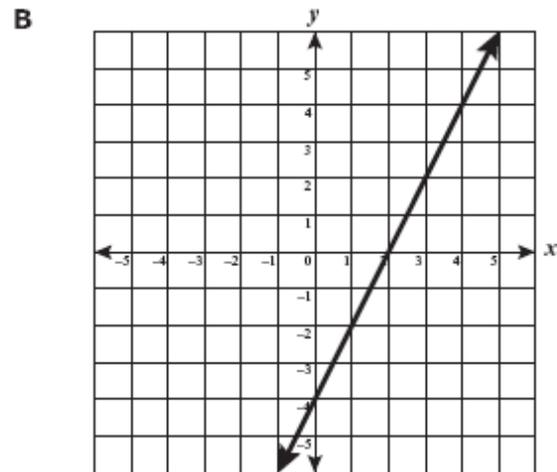
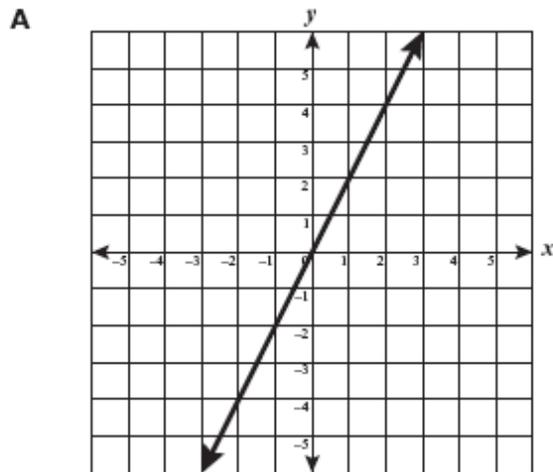
- A  $\{0, \frac{1}{2}, 1.5, 2\}$
- B  $\{-1, 0, 2, 3\}$
- C  $\{\frac{-1}{4}, 0, \frac{1}{3}, 0.99\}$
- D  $\{-1.9, -1.5, -0.99, 0\}$

70 In which of the following pairs do both numbers have the same absolute value?

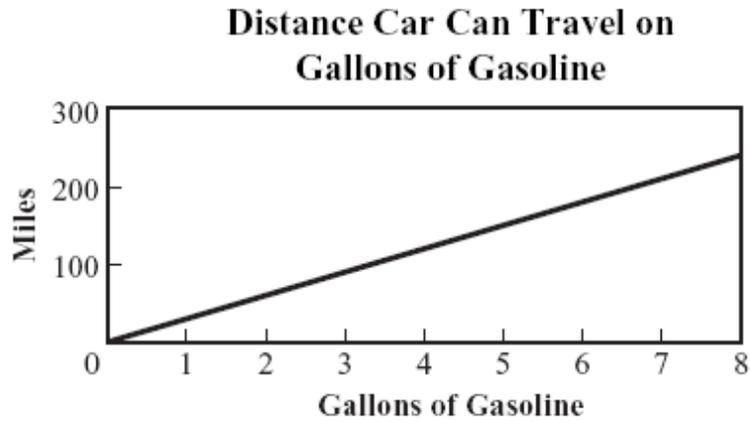
- A 3.2 and  $3.2^2$
- B 3.2 and  $-3.2$
- C 3.2 and 1
- D 3.2 and  $\frac{1}{3.2}$

- 71 Which algebraic expression represents “three times the quantity of  $x - 5$ ”?
- A  $3x - 5$
  - B  $3x - 5x$
  - C  $3(x - 5)$
  - D  $3(x - 5x)$
- 72 What is the value of  $2r + 3s$  when  $r = -2$  and  $s = 6$ ?
- A 6
  - B 9
  - C 14
  - D 22
- 73 Phil added 10 to a number and multiplied the sum by 2. The new number was 30. What was the original number?
- A 5
  - B 10
  - C 15
  - D 20

74 Which of the following appears to be a graph of  $y = 2x$ ?



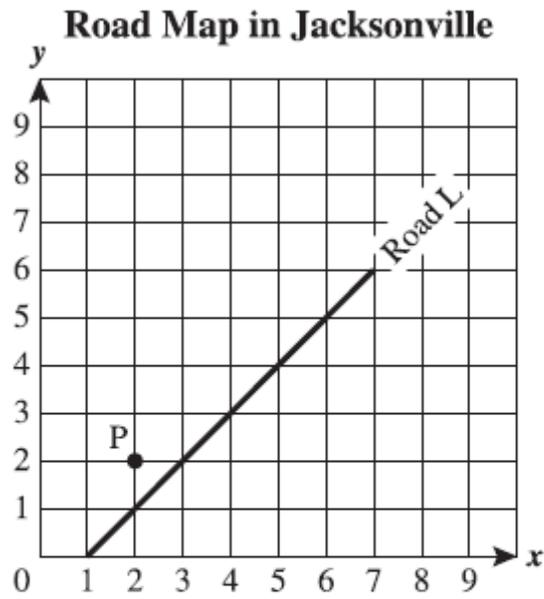
75 The following graph shows how far a car can go depending on the amount of gasoline used.



Which of the following *best* describes this graph?

- A It constantly increases.
- B It constantly decreases.
- C It increases and decreases.
- D It neither increases nor decreases.

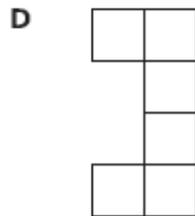
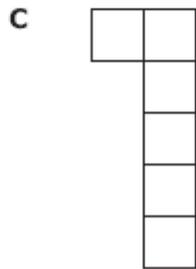
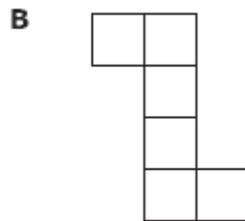
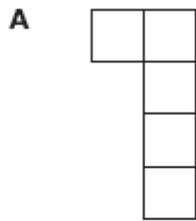
- 76 Roads L and M are parallel. On a map, Road L passes through (2, 1) and (3, 2). Road M passes through point P (2, 2).



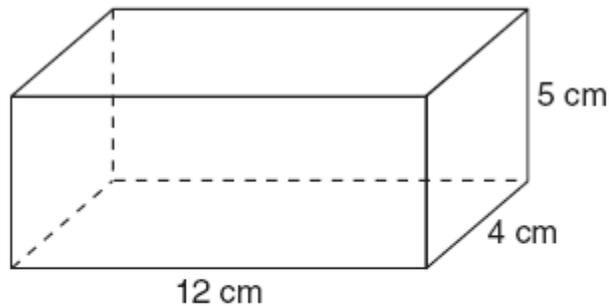
Through which other point does Road M also pass?

- A (1, 3)
- B (2, 3)
- C (3, 3)
- D (4, 3)

77 Which net, when folded, will cover all of the faces of the cube?



78 What is the volume of the rectangular prism below?



(Volume = length  $\times$  width  $\times$  height)

- A** 21 cm<sup>3</sup>
- B** 63 cm<sup>3</sup>
- C** 240 cm<sup>3</sup>
- D** 256 cm<sup>3</sup>

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79 Four friends each owe Cathy \$8. What is the total debt owed to Cathy?

- A \$ 4
- B \$12
- C \$32
- D \$48

80 Which statement is equivalent to the fraction  $-\frac{7}{2}$  ?

- A -2 divided by 7
- B -2 divided by -7
- C -7 divided by 2
- D -7 divided by -2

81 Which shows 17,600,000 written in scientific notation?

- A  $176 \times 10^5$
- B  $17.6 \times 10^6$
- C  $1.76 \times 10^7$
- D  $0.176 \times 10^8$

82 What value of  $m$  makes the equation below true?

$$\frac{3}{4} \div 1 = m$$

A 4

B  $\frac{4}{3}$

C  $\frac{3}{4}$

D  $\frac{1}{4}$

83 Which of the following is equivalent to  $9 - 10$ ?

A  $-9 - 10$

B  $9 + -10$

C  $10 - 1$

D  $9 + 10$

## Scoring Key: Part 1

Item No.	Correct Answer	GLCE	Type	Description
1	B	N.FL.06.04	Core-NC	x and $\div$ any two fractions, including mixed numbers
2	A	N.FL.06.04	Core-NC	x and $\div$ any two fractions, including mixed numbers
3	A	N.FL.06.04	Core-NC	x and $\div$ any two fractions, including mixed numbers
4	B	N.FL.06.10	Core-NC	Compute with positive rational numbers
5	C	N.FL.06.10	Core-NC	Compute with positive rational numbers
6	D	N.FL.06.10	Core-NC	Compute with positive rational numbers

NC=Non Calculator

## Scoring Key: Part 2

Item No.	Correct Answer	GLCE	Type	Description
7	B	N.MR.06.01	Core	Understand $\div$ of fractions as the inverse of x
8	B	N.MR.06.01	Core	Understand $\div$ of fractions as the inverse of x
9	A	N.MR.06.01	Core	Understand $\div$ of fractions as the inverse of x
10	A	N.FL.06.02	Core	Write a statement to represent dividing fractions
11	D	N.FL.06.02	Core	Write a statement to represent dividing fractions
12	D	N.FL.06.02	Core	Write a statement to represent dividing fractions
13	C	N.ME.06.11	Core	Find equivalent ratios by scaling up or down
14	B	N.ME.06.11	Core	Find equivalent ratios by scaling up or down
15	C	N.ME.06.11	Core	Find equivalent ratios by scaling up or down
16	B	A.PA.06.01	Core	Solve applied problems involving rates
17	A	A.PA.06.01	Core	Solve applied problems involving rates
18	C	A.PA.06.01	Core	Solve applied problems involving rates
19	A	A.RP.06.02	Core	Plot ordered pairs of integers
20	C	A.RP.06.02	Core	Plot ordered pairs of integers

## Scoring Key: Part 2 (continued)

Item No.	Correct Answer	GLCE	Type	Description
21	B	A.RP.06.02	Core	Plot ordered pairs of integers
22	C	A.FO.06.03	Core	Use letters, with units, to represent quantities
23	C	A.FO.06.03	Core	Use letters, with units, to represent quantities
24	D	A.FO.06.03	Core	Use letters, with units, to represent quantities
25	B	A.FO.06.06	Core	Represent words using algebraic equations
26	B	A.FO.06.06	Core	Represent words using algebraic equations
27	D	A.FO.06.06	Core	Represent words using algebraic equations
28	D	G.GS.06.02	Core	Understand congruence for polygons
29	D	G.GS.06.02	Core	Understand congruence for polygons
30	A	G.GS.06.02	Core	Understand congruence for polygons
31	B	D.PR.06.01	Core	Express probabilities as fractions, decimals or %s
32	D	D.PR.06.01	Core	Express probabilities as fractions, decimals or %s
33	A	D.PR.06.01	Core	Express probabilities as fractions, decimals or %s

## Scoring Key: Part 3

Item No.	Correct Answer	GLCE	Type	Description
34	A	N.MR.06.13	Core	Solve contextual problems involving percentages
35	B	N.MR.06.13	Core	Solve contextual problems involving percentages
36	C	N.MR.06.13	Core	Solve contextual problems involving percentages
37	A	N.FL.06.14	Core	Estimate calculations involving rational numbers
38	C	N.FL.06.14	Core	Estimate calculations involving rational numbers
39	B	N.FL.06.14	Core	Estimate calculations involving rational numbers
40	A	N.FL.06.15	Core	Solve applied problems with appropriate decimals
41	C	N.FL.06.15	Core	Solve applied problems with appropriate decimals
42	B	N.FL.06.15	Core	Solve applied problems with appropriate decimals
43	B	N.ME.06.17	Core	Locate negative rational numbers on number line
44	C	N.ME.06.17	Core	Locate negative rational numbers on number line
45	B	N.ME.06.17	Core	Locate negative rational numbers on number line
46	B	A.FO.06.11	Core	Relate simple linear equations to contexts; solve
47	A	A.FO.06.11	Core	Relate simple linear equations to contexts; solve
48	A	A.FO.06.11	Core	Relate simple linear equations to contexts; solve
49	B	A.FO.06.12	Core	Add, subtract numbers on both sides of equations
50	A	A.FO.06.12	Core	Add, subtract numbers on both sides of equations
51	C	A.FO.06.12	Core	Add, subtract numbers on both sides of equations
52	C	A.FO.06.13	Core	Multiply, divide numbers on both sides of equations

## Scoring Key: Part 3 (continued)

Item No.	Correct Answer	GLCE	Type	Description
53	D	A.FO.06.13	Core	Multiply, divide numbers on both sides of equations
54	B	A.FO.06.13	Core	Multiply, divide numbers on both sides of equations
55	C	M.UN.06.01	Core	Convert measures within a single system
56	B	M.UN.06.01	Core	Convert measures within a single system
57	C	M.UN.06.01	Core	Convert measures within a single system
58	A	G.TR.06.03	Core	Understand rigid motions & relate to congruence
59	B	G.TR.06.03	Core	Understand rigid motions & relate to congruence
60	B	G.TR.06.03	Core	Understand rigid motions & relate to congruence
61	B	A.FO.06.04	Extended	Distinguish between algebraic expression/equation
62	C	A.RP.06.08	Extended	Relationships can be shown by graphs and tables
63	D	D.PR.06.02	Extended	Compute probabilities of events from experiments
64	C	G.TR.06.04	Extended	Use simple compositions of rigid transformations
65	B	N.FL.06.12	Extended-NC	Calculate part of a number given the % and number
66	B	N.ME.06.05	Extended	Order rational numbers and place on the number line
67	B	N.ME.06.06	Extended	Show rationals as fractions or terminating decimals
68	A	N.ME.06.18	Extended	Understand that rationals are quotients of integers
69	B	N.ME.06.19	Extended	Understand that 0 is neither negative nor positive

## Scoring Key: Part 3 (continued)

Item No.	Correct Answer	GLCE	Type	Description
70	B	N.ME.06.20	Extended	Know the absolute value of a number
71	C	A.FO.06.05	Future	Use conventions for writing algebraic expressions
72	C	A.FO.06.07	Future	Simplify linear expression & evaluate using values
73	A	A.FO.06.14	Future	Solve equations of the form $ax + b = c$
74	A	A.PA.06.09	Future	Solve problems involving linear functions
75	A	A.RP.06.10	Future	Show relationships using equations, tables, graphs
76	C	G.GS.06.01	Future	Understand and apply properties of lines and angles
77	B	M.PS.06.02	Future	Draw patterns for rectangular prisms
78	C	M.TE.06.03	Future	Compute volume & surface area of rectangular prisms
79	C	N.FL.06.09	Future-NC	Compute with integers, use # line & chip models
80	C	N.ME.06.07	Future	Understand fractions as a quotient of two integers
81	C	N.ME.06.16	Future	Use integer exponents & scientific notation
82	C	N.MR.06.03	Future	Solve for the unknown in equations
83	B	N.MR.06.08	Future	Understand - and $\div$ as inverse of + and $\times$