

# Oklahoma School Testing Program



Oklahoma Core Curriculum Tests

## 2009–2010 Released Items

End-of-Instruction  
ACE Algebra I

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Oklahoma State Department of Education  
Oklahoma City, Oklahoma



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# Section 1

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## Directions

Read each question and choose the best answer.

**1** Which statement represents the equation  $\frac{x^2}{7} = 25$ ?

- A** A number squared decreased by 7 is 25.
- B** The product of a number squared and 7 is 25.
- C** The quotient of a number squared and 7 is 25.
- D** The product of  $x$  and 2 is equal to the quotient of 25 and 7.

**2** Which expression represents the phrase "two increased by five times a number"?

- F**  $5 + 2x$
- G**  $2(5 + x)$
- H**  $2(5x)$
- J**  $2 + 5x$

**3** The formula below can be used to convert the temperature in degrees Celsius ( $^{\circ}\text{C}$ ) to the temperature in degrees Fahrenheit ( $^{\circ}\text{F}$ ).

$$F = \frac{9}{5}C + 32$$

What is  $15^{\circ}$  Celsius in degrees Fahrenheit?

- A**  $15^{\circ}$
- B**  $47^{\circ}$
- C**  $59^{\circ}$
- D**  $85^{\circ}$

4 What is the value of  $|x + 5|$  when  $x$  is  $-7$ ?

- F  $-12$
- G  $-2$
- H  $2$
- J  $12$

5

$$7x + x - 6x + x$$

What is the simplified form of this expression?

- A  $x$
- B  $x^4$
- C  $3x$
- D  $3x^4$

6

$$8x^2 - 6x + 12$$

$$3x^2 - 9x - 2$$

What is the difference of these two expressions?

- F  $5x^2 + 3x + 10$
- G  $5x^2 + 3x + 14$
- H  $5x^2 - 15x + 10$
- J  $5x^2 - 15x + 14$

## Section 1

**7** Which of these sets of ordered pairs  $(x, y)$  could represent a functional relationship?

- A  $\{(-2, 4), (-1, 1), (0, 0), (1, 1), (2, 4)\}$
- B  $\{(4, -2), (1, -1), (0, 0), (1, 1), (4, 2)\}$
- C  $\{(1, 1), (1, 2), (2, 1), (2, 2)\}$
- D  $\{(-1, 1), (-1, -1), (1, 1), (1, -1)\}$

**8** The equation  $C = 40x + 400$  is the cost function for producing  $x$  bicycles. Why must the domain of  $x$  be restricted to  $x \geq 0$ ?

- F Positive values decrease cost.
- G Negative values increase cost.
- H You cannot produce fewer than 0 bicycles.
- J The graph of  $C$  does not exist for  $x < 0$ .

**9**

$$f(x) = -3x + 1$$

What is  $f(3)$ ?

- A -10
- B -8
- C 8
- D 10

**10** Mandy cut a 50-foot long rope into 3 pieces. The first piece is twice as long as the second piece. The third piece is 5 feet less than the first piece. How long are the pieces?

- F 18, 9, and 13 feet long
- G 22, 11, and 17 feet long
- H 24, 12, and 19 feet long
- J 28, 14, and 8 feet long

**11** What happens to the graph of  $y = x$  when the function changes to  $y = 4x$ ?

- A The slope changes from 0 to 4.
- B The slope changes from 1 to 4.
- C The  $y$ -intercept changes from 0 to 4.
- D The  $y$ -intercept changes from 1 to 4.

**12** What is the slope of the line represented by the equation  $6x - 3y = 9$ ?

- F -6
- G -2
- H 2
- J 6

## Section 1

**13** Which of these describes the line which contains the points  $(4, 5)$  and  $(-3, 5)$ ?

- A the line is vertical
- B the line is horizontal
- C the line has a positive slope
- D the line has a negative slope

**14** A bookstore's retail sales at the end of 1996 were \$500,000. By the end of 2000 the retail sales had increased to \$600,000. What was the average rate of change in sales per year?

- F \$10,000
- G \$20,000
- H \$25,000
- J \$30,000



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$x$	$y$
-2	5
0	-1
2	-7

What is the equation of the line that passes through the points in the table?

- A  $y = -3x + 5$
- B  $y = -3x - 1$
- C  $y = -7x - 9$
- D  $y = -7x + 19$

16 Mr. Yaguchi was paid a weekly salary plus a percent of his sales. The table below shows his sales and total pay over a four-week period.

Mr. Yaguchi's Pay

	Week 1	Week 2	Week 3	Week 4
Sales ( $x$ )	\$10,000	\$6,000	\$12,000	\$8,000
Total Pay ( $y$ )	\$1,250	\$850	\$1,450	\$1,050

Which linear equation models this data?

- F  $y = 0.1x + 100$
- G  $y = 0.1x + 150$
- H  $y = 0.1x + 200$
- J  $y = 0.1x + 250$

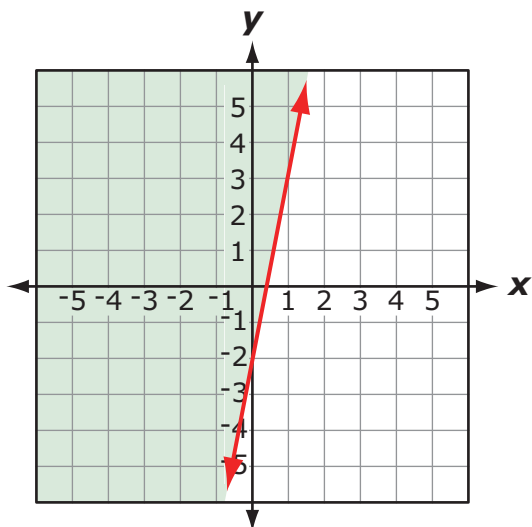
## Section 1

**17** Which statement describes the values of  $x$  that satisfy the inequality  $-3x < 6$ ?

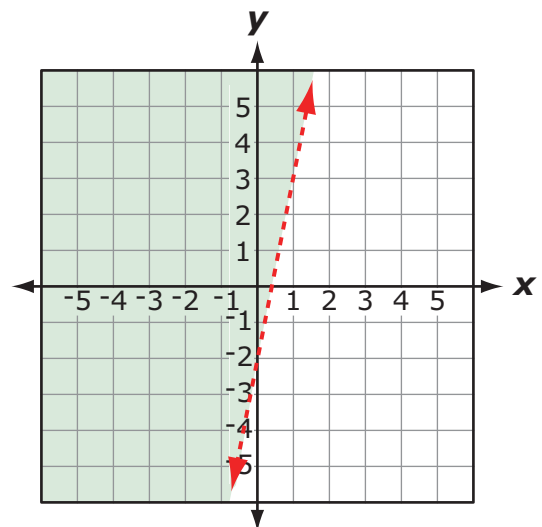
- A  $x$  is less than 9.
- B  $x$  is less than  $-2$ .
- C  $x$  is greater than 9.
- D  $x$  is greater than  $-2$ .

**18** Which graph represents the inequality  $5x - y > 2$ ?

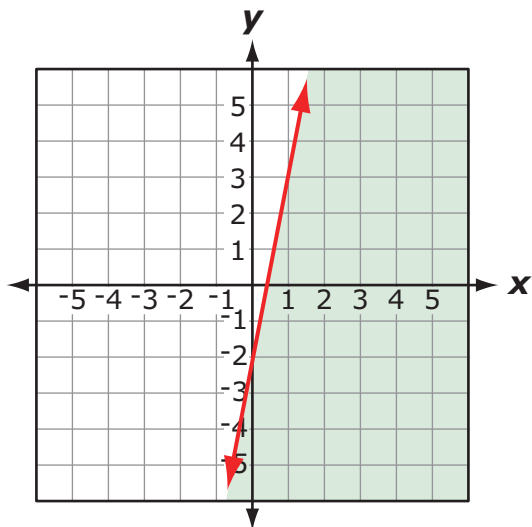
F



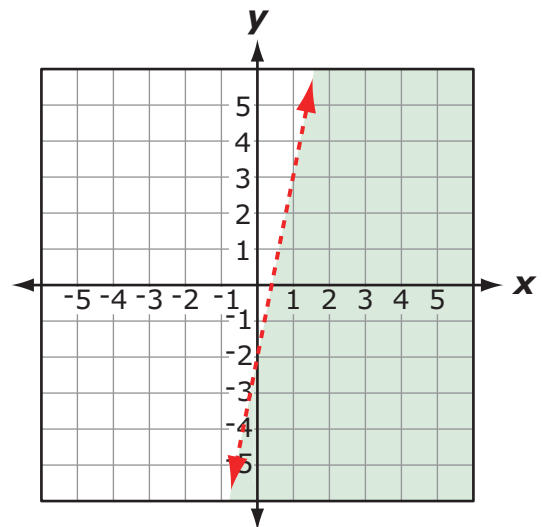
G



H



J



- 19 A corporation purchased a company for \$50,000. The cost to run the company averages \$1,000 per month and the revenue is \$2,000 per month. The equations below model this situation, where  $t$  is the time, in months.

$$\begin{aligned}\text{Costs} &= \$50,000 + 1,000t \\ \text{Revenue} &= 2,000t\end{aligned}$$

How long will it take to break even (revenue = costs)?

- A 40 months
- B 45 months
- C 50 months
- D 55 months

20

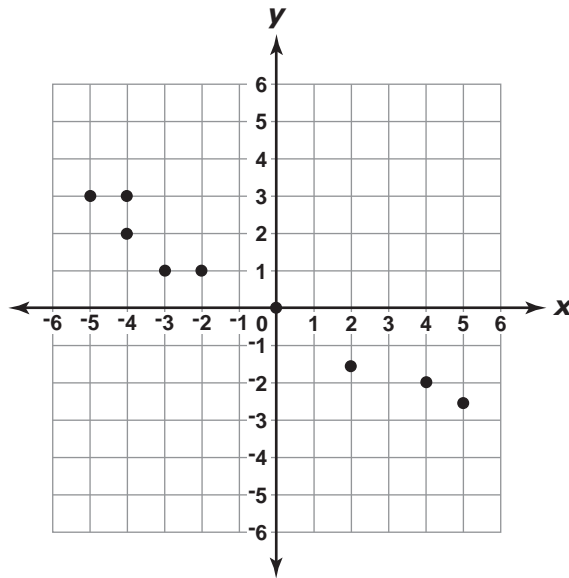
$$\begin{cases} 3x + y = -9 \\ -3x + -2y = 12 \end{cases}$$

What is the  $y$ -value of the solution to this system of equations?

- F -7
- G -3
- H -2
- J -1

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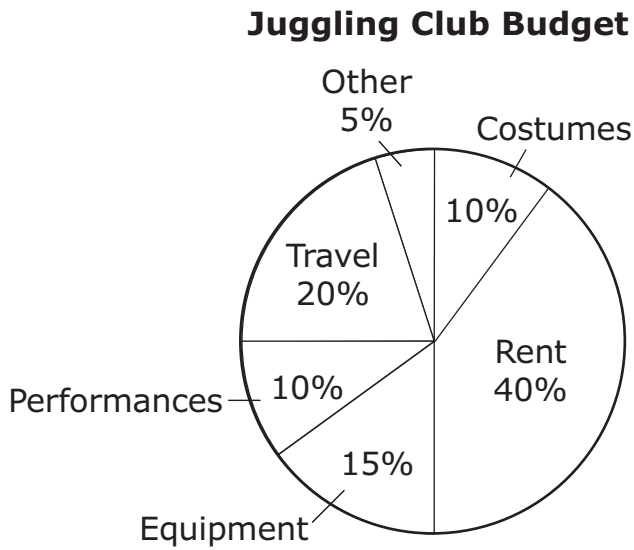


Which of these equations represents the line of best fit for the data in this scatter plot?

- A  $y = -2x$
- B  $y = -\frac{1}{2}x$
- C  $y = \frac{1}{2}x$
- D  $y = 2x$

Use the information below to answer Numbers 22, 23, 24 and 25.

The town juggling club displayed their yearly budget on the circle graph below.



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**22** Of the money in the travel budget, 40% was used for a trip to Arkansas. What portion of the club's total budget was used for travel to Arkansas?

- F 8%
- G 24%
- H 40%
- J 60%

**23** Which is the best reason to display the budget on a circle graph instead of in a table?

- A The circle graph is easier to make.
- B The circle graph can show all the information.
- C The circle graph contains a category for "other."
- D The circle graph shows the relative size of each budget category.

**24** Which piece of information can not be determined from the circle graph shown?

- F the category on which the club spends the most
- G how many categories are in the budget
- H how much money the club spends each year
- J whether performances cost the club more than equipment

**25** The club budgeted  $n$  dollars for rent. For which category did the club budget  $\frac{n}{2}$  dollars?

- A Costumes
- B Equipment
- C Performances
- D Travel



**STOP**

**END OF SECTION 1**

