

Oklahoma School Testing Program



Oklahoma Core Curriculum Tests

2009–2010 Released Items

End-of-Instruction
ACE Algebra I

Oklahoma State Department of Education
Oklahoma City, Oklahoma

Section 1

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° Celsius in degrees Fahrenheit?

- A 15°
- B 47°
- C 59°
- D 85°

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

15

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 $y = 0.1x + 250$

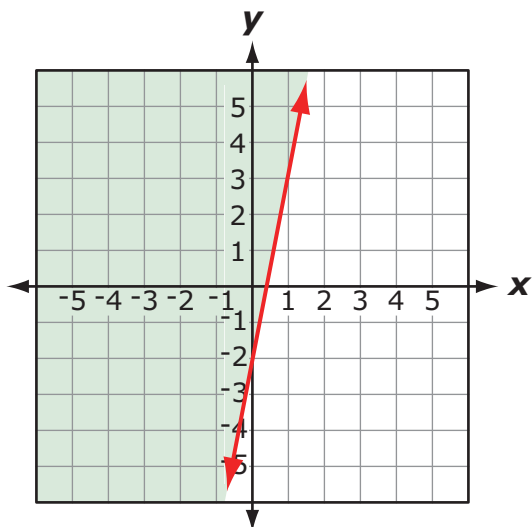
Section 1

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

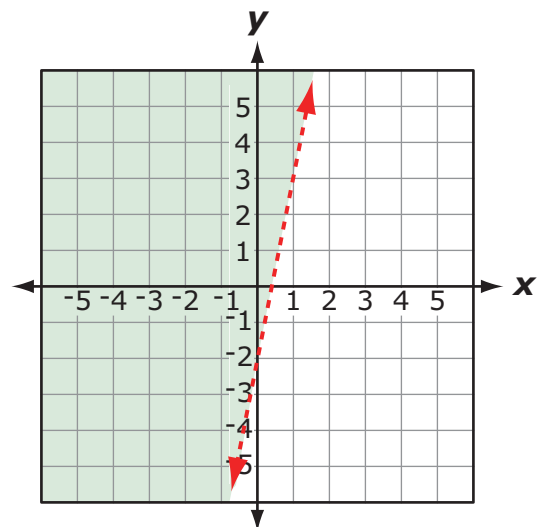
- A x is less than 9.
- B x is less than -2 .
- C x is greater than 9.
- D x is greater than -2 .

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

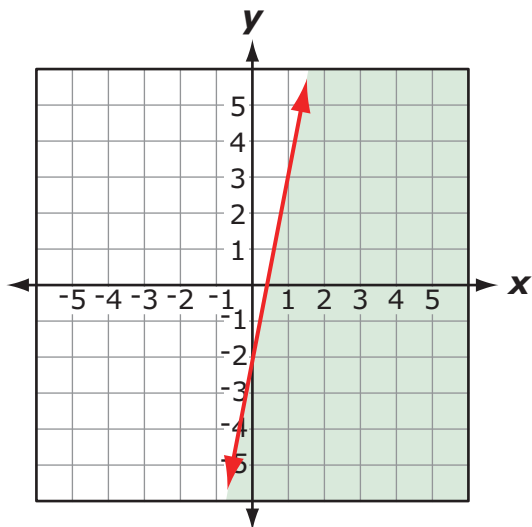
F



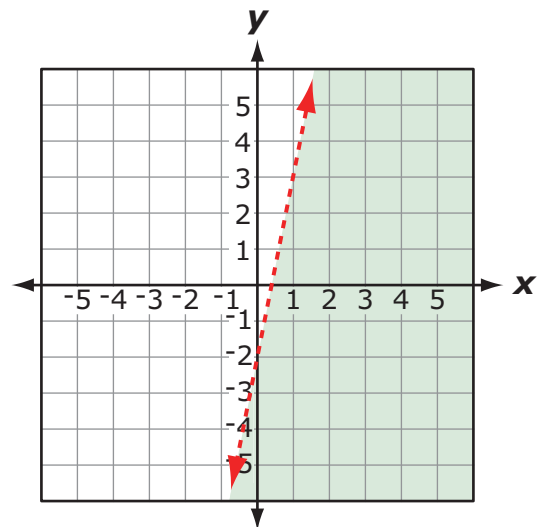
G



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

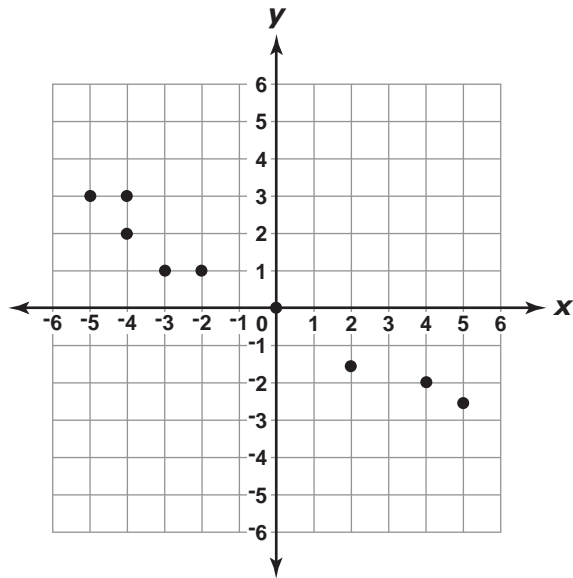
$$\begin{cases} 3x + y = -9 \\ -3x + -2y = 12 \end{cases}$$

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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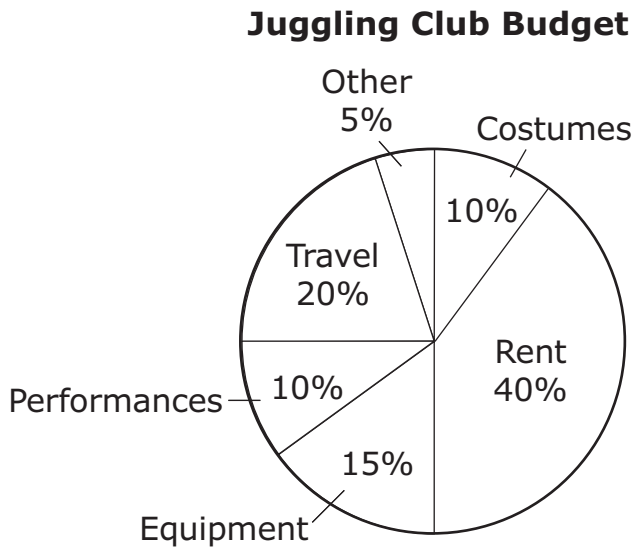


Which of these equations represents the line of best fit for the data in this scatter plot?

- 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.



Section 1

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

**Oklahoma End-of-Instruction
2009-2010 Released Items Answer Key
ACE Geometry**

Item Number	Correct Answer	Standard	Objective	Skill
1	A	1	1	x
2	J	1	1	x
3	A	1	2	x
4	F	2	2	a
5	D	2	2	b
6	F	2	3	b
7	A	2	3	d
8	H	2	4	a
9	C	2	4	b
10	G	2	5	b
11	D	2	6	a
12	G	2	6	a
13	A	2	6	b
14	H	3	1	x
15	B	3	2	x
16	G	3	2	x
17	A	3	3	x
18	G	4	1	b
19	A	4	2	b
20	J	4	3	x
21	D	5	1	x
22	F	5	2	a
23	D	5	2	b
24	H	3	3	x
25	B	4	1	a
26	H	4	2	b