MATH-A

Algebra I-1 Final Exam

[Exam ID:2LRCLG

Exam not valid for Paper Pencil Test Sessions

1 **If 112 children sign up for a field trip and each vehicle carries x children, which expression could be used to determine the number of vehicles needed for the trip?**

A $112 - x$

B $\frac{x}{112}$

C $112x$

D $\frac{112}{x}$

2 **Which statement could be represented by the expression $n^2 + 4n$?**

A The square of the product of a number and four

B The square of a number increased by four times the number

C The sum of two times a number and four times a number

D The square of a number increased by four

3 **In simplest radical form, $\sqrt{845}$ is equal to —**

A 13

B $13\sqrt{3}$

C $13\sqrt{2}$

D $13\sqrt{5}$

4 **What is the solution to the following equation?**

$$5(x + 2) = 7(4 - x)$$

A 3.2

B -9.0

C 9.0

D 1.5

5 **Which property is illustrated by the following statement?**

$$4\left(\frac{1}{4}\right) = 1$$

A Distributive property
B Commutative property of multiplication
C Multiplicative identity property
D Multiplicative inverse property

6 **What is $\sqrt{108}$ written in simplest radical form?**

A $18\sqrt{3}$
B $2\sqrt{27}$
C $3\sqrt{12}$
D $6\sqrt{3}$

7 **What is the solution to the following equation?**

$$4x - 1 = 2x + 5$$

A $x = 4$
B $x = 2$
C $x = 1$
D $x = 3$

8 **What is the solution to the following inequality?**

$$3(x - 3) \leq 3$$

A $x \geq 4$
B $x \leq 2$
C $x \leq 4$
D $x \geq 2$

9 **Which statement *cannot* be justified by one of the properties of real numbers?**

A $(a + b) + c = a + (b + c)$
B $(a + b) + 0 = 0 + (a + b)$
C $(ab)c = a(bc)$
D $a - (b \div c) = (a - b) \div c$

10 **What is the value of this expression when $x = \frac{2}{3}$?**

$$x^2 + 3x - 2$$

A $\frac{16}{3}$

B $\frac{40}{9}$

C $\frac{4}{3}$

D $\frac{4}{9}$

11 **What is the value of a (3 – b) if $a = 2$ and $b = 5$?**

A 0

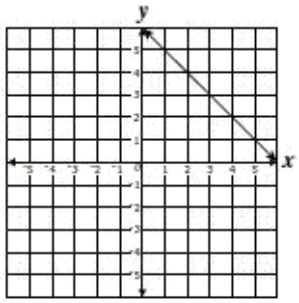
B –4

C 16

D 5

12 **Which graph *best* represents a direct variation?**

A



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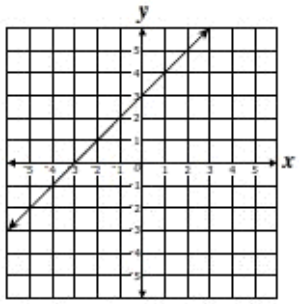

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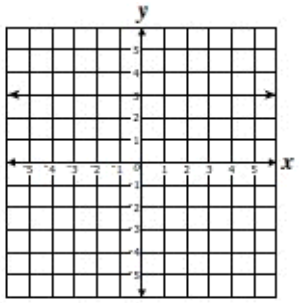

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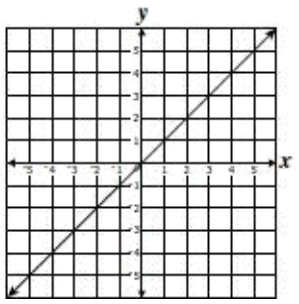


13 **What is the value of the expression $3(x + 4) - 2y$, if $x = 5$ and $y = -3$?**

A 21

B 33

C 11

D –7

14 **Which property of real numbers justifies the work shown?**

$$13x - 1 = (12x + 15) + 7x$$
$$13x - 1 = 7x + (12x + 15)$$

A Commutative property of addition
B Associative property of addition
C Identity property of addition
D Distributive property

15 **What is the solution to $8 - 2x \geq -4$?**

A $x \geq 6$
B $x \leq 6$
C $x \leq 2$
D $x \geq 2$

16 **What are the range values of the function $f(x) = -3x^2 + 5$ for the domain values $\{-2, 0, 1\}$?**

A $\{-31, -4, 5\}$
B $\{5, 14, 41\}$
C $\{-7, 2, 5\}$
D $\{5, 8, 17\}$

17 **What is the solution to the inequality below?**

$$2x - 7 \geq 15$$

A $x \geq 11$
B $x \leq 8$
C $x \geq 8$
D $x \leq 11$

18 **The formula shown can be used to find *A* , the amount of money Raul has in his savings account.**

$$A = P + Prt$$

Raul wants to find *r* , the rate of interest his money earns. Which equation is correctly solved for *r* ?

A $r = APt$

B $r = A - 2Pt$

C $r = \frac{A}{2Pt}$

D $r = \frac{A - P}{Pt}$

19 **If $\frac{1}{4}x + 1 > \frac{15}{2}$, then —**

A $x > \frac{13}{2}$

B $x > 28$

C $x > 29$

D $x > 26$

20 **The number of words Maria typed varied directly with the amount of time she spent typing. If she typed 275 words in 5 minutes, how long would it take her to type 1,100 words?**

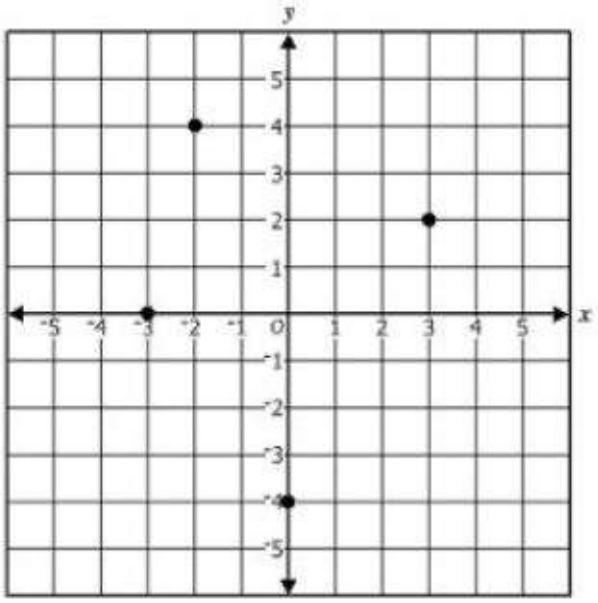
A 15 minutes

B 20 minutes

C 220 minutes

D 4 minutes

21 **What is the range of this relation?**



A $\{ x \mid -3 \leq x \leq 3 \}$
B $\{ -3, -2, 0, 3 \}$
C $\{ y \mid -4 \leq y \leq 4 \}$
D $\{ -4, 0, 2, 4 \}$

22 **In addition to an $80 bonus, Joan earned $8 per hour working last week. Joan's total earnings last week were $240. How many total hours did she work last week?**

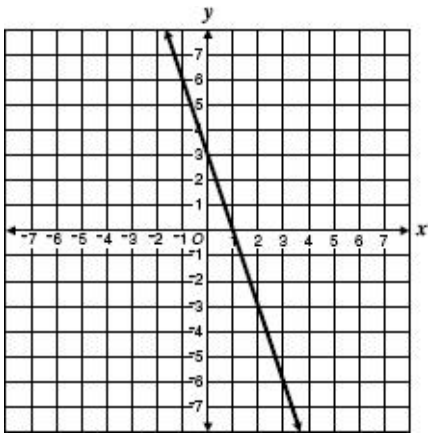
A 10
B 20
C 40
D 30

23 **What is the solution to the following equation?**

$$7x - 5 = 2x + 5$$

A $x = 3$
B $x = 4$
C $x = 5$
D $x = 2$

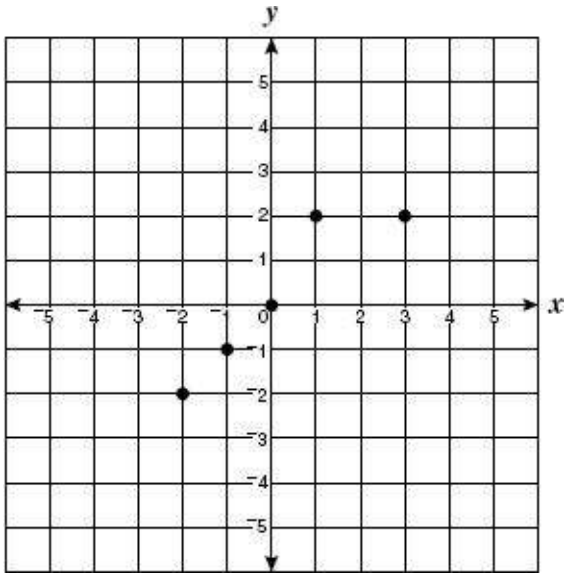
24 **The graph of the function $f(x) = -3x + 3$ is shown.**



What is the value of $f(3)$?

A −6
B 3
C −2
D 0

25 **What is the range of the relation plotted on the graph?**



A {−2, −1, 0, 2}
B {−2, −1, 0, 1, 2}
C {−2, −1, 1, 2}
D {−2, −1, 0, 1, 2, 3}

26 **While solving an equation, Lenny wrote the following steps on the board.**

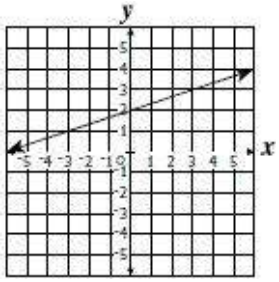
$$(2x+1)+5=9$$
$$2x+(1+5)=9$$

What property of real numbers guarantees that the second equation is equivalent to the first?

A Additive inverse property
B Associative property of addition
C Distributive property
D Commutative property of addition

27 **Which graph best represents the equation of the line $y = \frac{-1}{3}x + 2$?**

A



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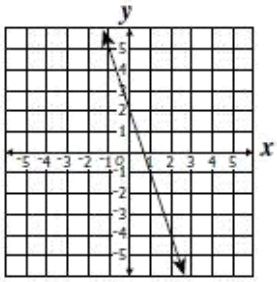

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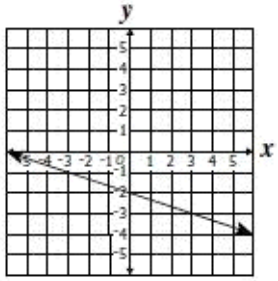
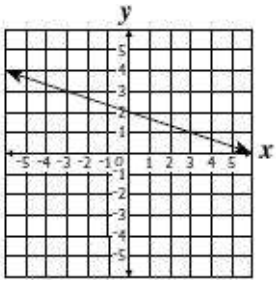


D

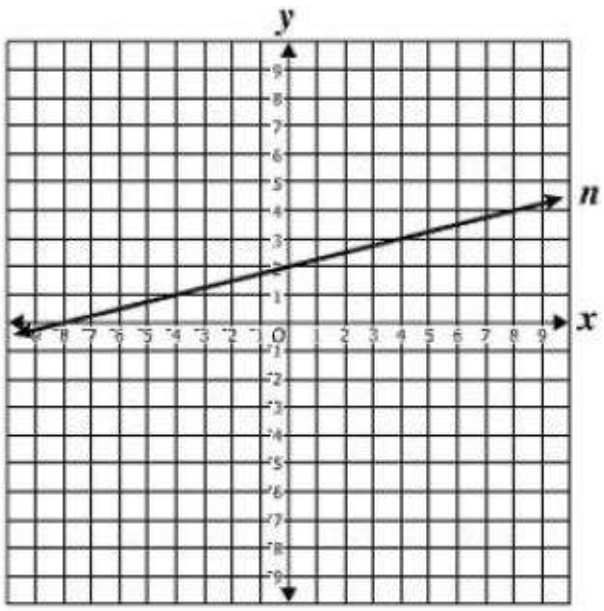


28 **If $2n = 6$, what property of equality justifies writing**

$$p + 2n = 4p + 15$$
as $$p + 6 = 4p + 15$$ **?**

A Symmetric property
B Addition property
C Transitive property
D Substitution property

29 **The graph of line *n* is shown.**



Which number is closest in value to the slope of line *n* ?

A -4

B $\frac{-1}{4}$

C $\frac{1}{4}$

D 4

30 **Which is an equation for the line with slope = $\frac{1}{2}$ and *y* – intercept of 3?**

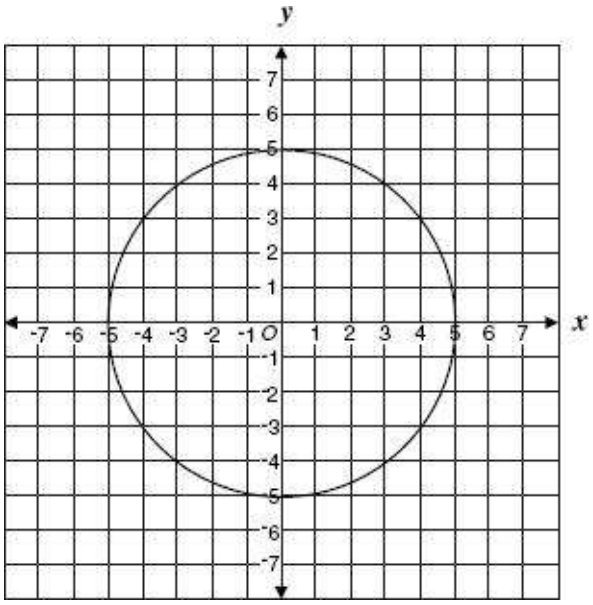
A $y = \frac{1}{2}x - 3$

B $y = 3x + \frac{1}{2}$

C $y = \frac{1}{2}x + 3$

D $y = -3x + \frac{1}{2}$

31 **Loki said the following graph does *not* represent a function of *x*.**

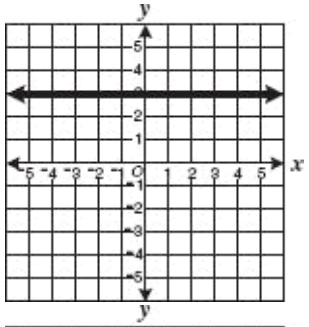


Which pair of points could Loki use to prove that her statement is correct?

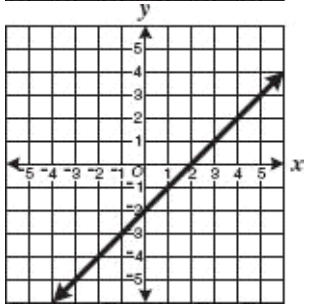
A (–3, 4) and (4, –3)
B (–3, 4) and (–3, –4)
C (–5, 0) and (5, 0)
D (–4, 3) and (4, 3)

32 **Which of the following is most likely the graph of a line with a slope of zero?**

A



B



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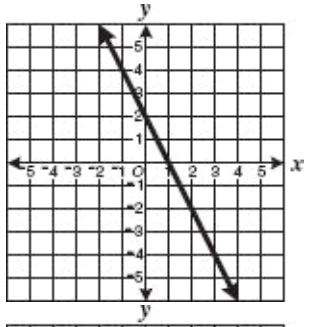

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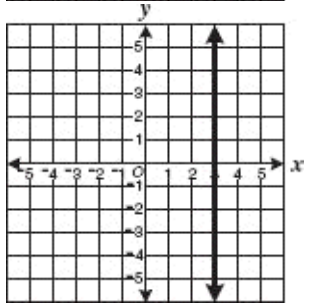


33 **What is the range of the function $f(x) = \frac{1}{2}x - 2$ when the domain is {2, 4, 6}?**

A {−1, 0, 1}

B $\{-1, 0, \frac{1}{2}\}$

C {8, 12, 16}

D {0, 1, 2}

34 **The expression**

$$5\sqrt{7}$$

is the simplest radical form of —

A $\sqrt{245}$

B $\sqrt{1{,}225}$

C $\sqrt{175}$

D $\sqrt{35}$

35 **What is the slope of the line represented by the following equation?**

$$4x - y + 3 = 0$$

A $\frac{4}{3}$

B 4

C $\frac{3}{4}$

D −1

36 **Lincoln High School earned $5,100 in ticket sales for a play. The cost per ticket was $12. Let t represent the number of tickets sold to the play. Which of the following equations could be used to determine how many tickets were sold to the play?**

A $t = 5{,}100 - 12$

B $12t = 5{,}100$

C $12 = 5{,}100t$

D $t = 5{,}100 \bullet 12$

37 Directions: Click on a box to choose each ordered pair you want to select. You must select all correct ordered pairs.

Using the ordered pairs shown, select each relation containing three ordered pairs with a domain of { –1, 2, 4 }.

(–3, –1)	(4, –2)
(–1, 0)	(3, 4)
(–2, 2)	(2, 3)

38 **Which is an equation for the line that passes through the points (3, 0) and (0, 2)?**

A $y = \frac{3}{2}x + 3$

B $y = \frac{2}{3}x + 3$

C $y = \frac{-2}{3}x + 2$

D $y = \frac{-3}{2}x + 2$

39 **What values of *x* make the following inequality true?**

$$-3(x + 1) \leq 15$$

A $x \geq -6$

B $x \leq -6$

C $x \geq 6$

D $x \leq 6$

40 **Which of these pairs of the form (*x, y*) could *not* lie on the graph of a function of *x*?**

A (1, 1) and (1, 2)

B (1, 1) and (2, 2)

C (1, 1) and (3, 1)

D (1, 1) and (2, 1)

41 **What is the solution to the inequality**

$$7x - 5 \geq x + 1?$$

A $x \geq -1$

B $x \leq 1$

C $x \geq 1$

D $x \leq \frac{5}{2}$

42 **What value of x will make the equation $3(x + 15) - 6x = -6(x - 3)$ true?**

A 3
B −9
C 2
D −6

43 Directions: Type an inequality in the box. Use the < or > for the inequality sign.

Solve for x :

$$-2x + 6 < x - 6$$

44 **Which is an equation for the line that contains (1,2) and has a slope of 4 ?**

A $y = -4x + 2$
B $y = 2x - 4$
C $y = 4x - 2$
D $y = -2x + 4$

45 **What is the solution to**

$$5 - \frac{n}{2} = 12?$$

A −14
B 14
C −34
D 34

46 **Which is the equation for the line that passes through (5 , −3) and has a slope of 6?**

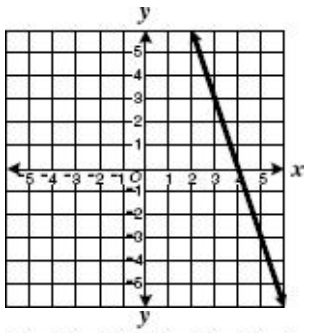
A $y = 6x - 3$
B $y = 4x + 2$
C $y = 6x - 33$
D $y = 6x + 30$

47 **The ordered pairs in the sets shown below are of the form (*x, y*). In which set of ordered pairs is *y* a function of *x* ?**

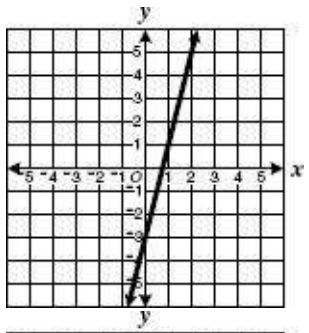
A {(7, –1), (7, –2), (7, –3)}
B {(1, 3), (2, 4), (3, 5)}
C {(–6, 12), (1, 8), (1, 13)}
D {(0, 2), (0, 4), (4, 0)}

48 **Which graph best represents a line with a y–intercept of 4 and slope –3?**

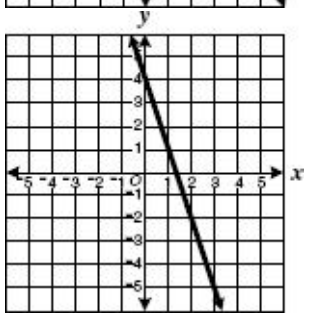
A



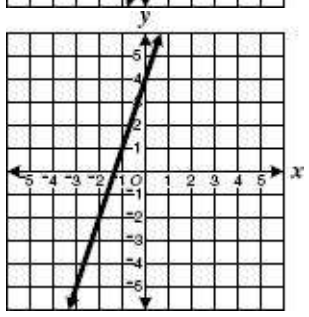
C



B



D



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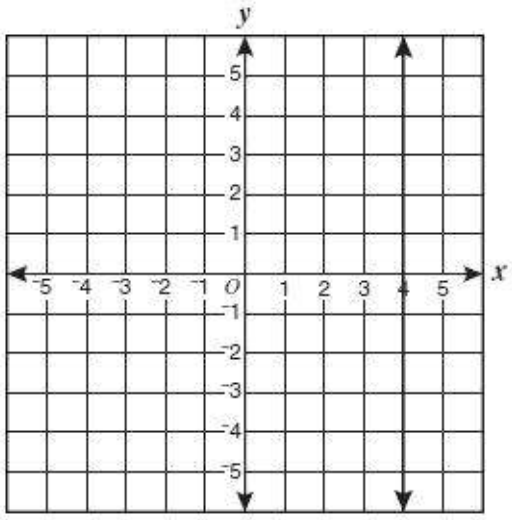
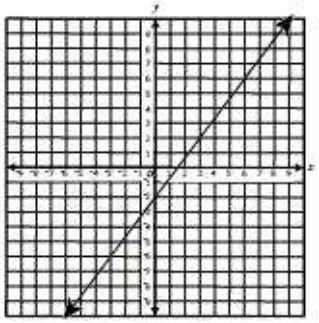


Which equation best represents the line shown on the figure?

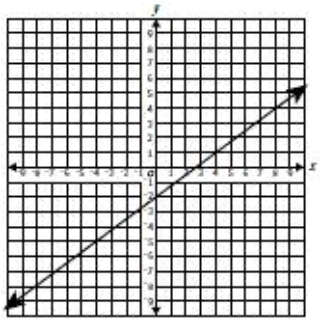
A $x = 4$
B $y = 4$
C $y = x - 4$
D $y = 4x$

50 **Which graph best represents the equation $y = \frac{3}{4}x - 2$?**

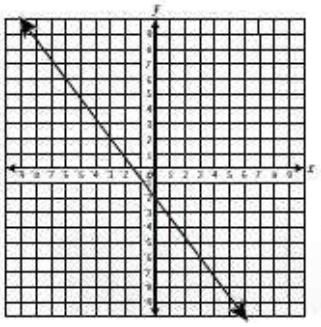
A



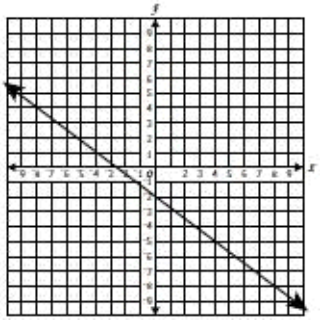
C



B

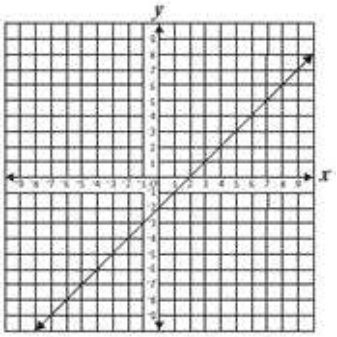


D



51 **Which of the following graphs shows a direct variation?**

A



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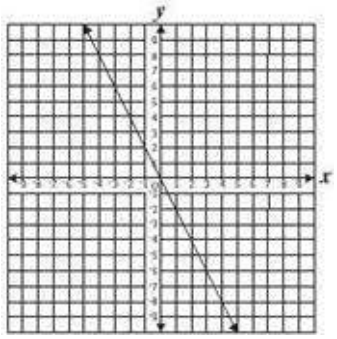

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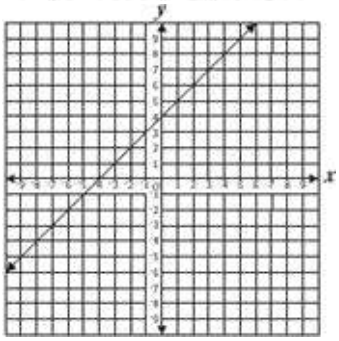
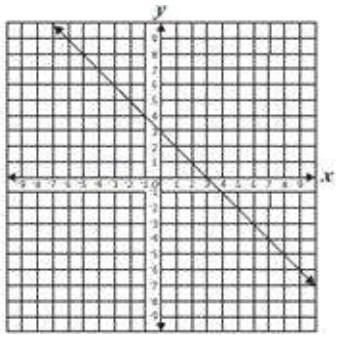


D



52 **If $\frac{1}{3}t - 6 = 15$, what is the value of t ?**

A 21
B 27
C 53
D 63

53 **What is the solution to the inequality shown below?**

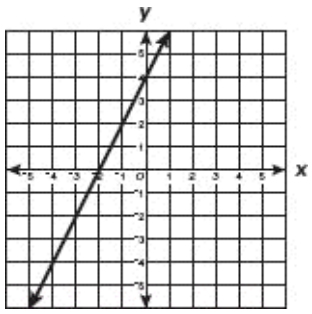
$$-2x + 3 > 7$$

A $x < 3$
B $x < -2$
C $x > 2$
D $x < -5$

54 **Which graph best represents the following function?**

$$y = 4x + 2$$

A



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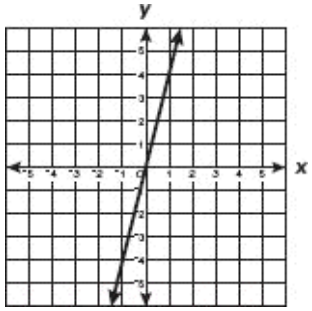
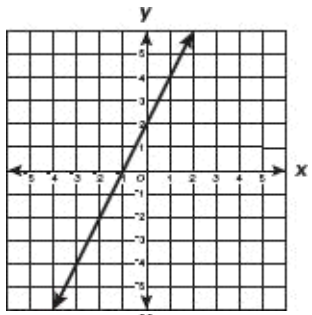
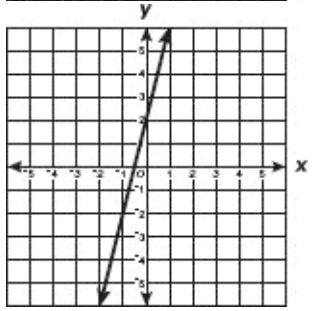


C



D



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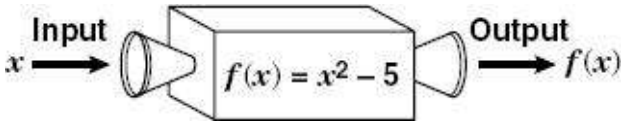

When the input is $\frac{1}{3}$, what is the output?

A $\frac{-14}{3}$
B $\frac{46}{9}$
C $\frac{-44}{9}$
D $\frac{-29}{6}$

56 **What value of m satisfies the equation shown below?**

$$5(m - 5) = 3(m + 1)$$

A 9
B 3.5
C −7.5
D 14

57 **The ordered pairs in the sets shown below are of the form (x, y). In which set of ordered pairs is y *not* a function of x?**

A {(1, 4),(2, 4),(3, 4),(4, 4)}
B {(2, 0),(4, 1),(6, 2),(8, 3)}
C {(11, 2),(12, 4),(13, 6)}
D {(−6, 37),(−6, 10),(−5, 26)}

58 **Candice plotted the points (2, 15) and (0, −1) then drew a line through these two points. What is the slope of the line she drew?**

A $\frac{1}{7}$
B $\frac{1}{8}$
C 7
D 8

59 **Which describes the graph of $g(x) = -3x + 5$?**

A A line with a slope of 3 and a y−intercept of −5.
B A line with a slope of −3 and a y−intercept of −5.
C A line with a slope of −3 and a y−intercept of 5.
D A line with a slope of 3 and a y−intercept of 5.

60 **Which equation represents the horizontal line passing through (7, 5)?**

A $x = 5$
B $y = 5$
C $x = 7$
D $y = 7$