

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 $x = \frac{2}{3}$?

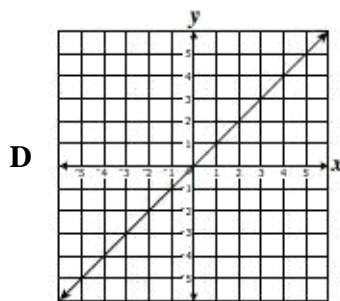
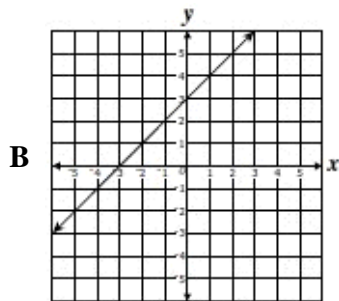
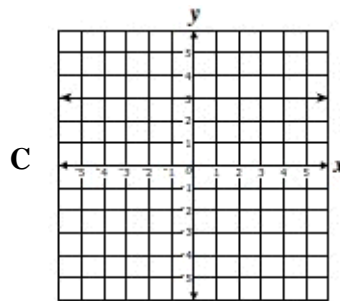
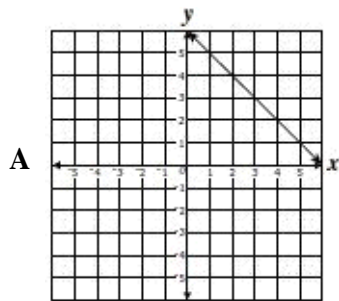
$$x^2 + 3x - 2$$

- 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?



- 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?

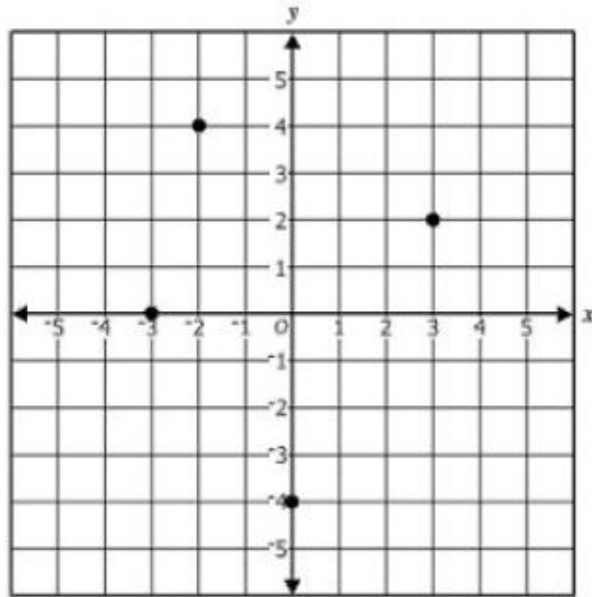
A 15 minutes

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?

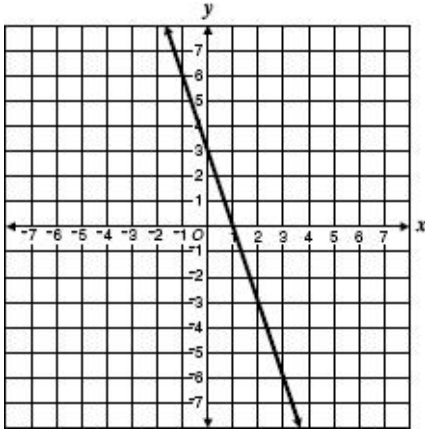
- A 10
- B 20
- C 40
- D 30

23 What is the solution to the following equation?

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

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

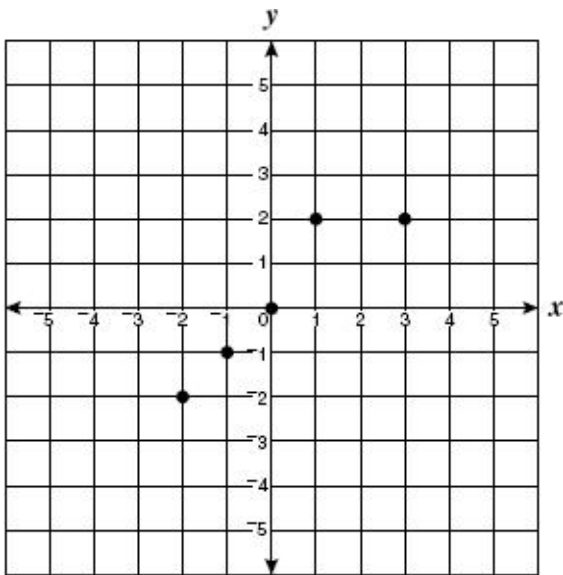
24 The graph of the function $f(x) = -3x + 3$ is shown.



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.

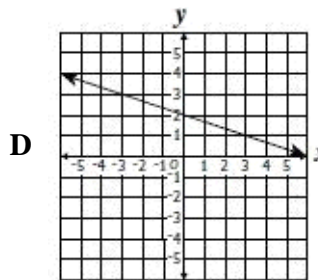
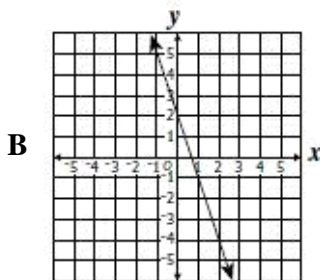
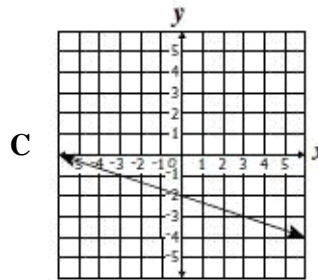
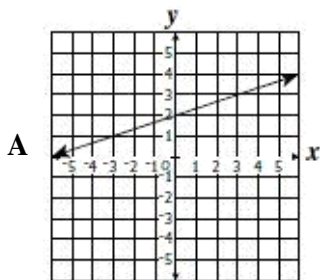
$$(2x + 1) + 5 = 9$$

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

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



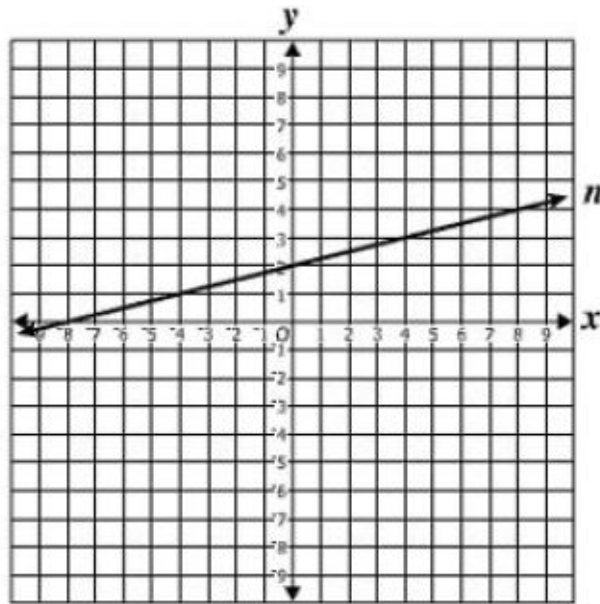
- 28 If $2n = 6$, what property of equality justifies writing

$$p + 2n = 4p + 15$$

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.



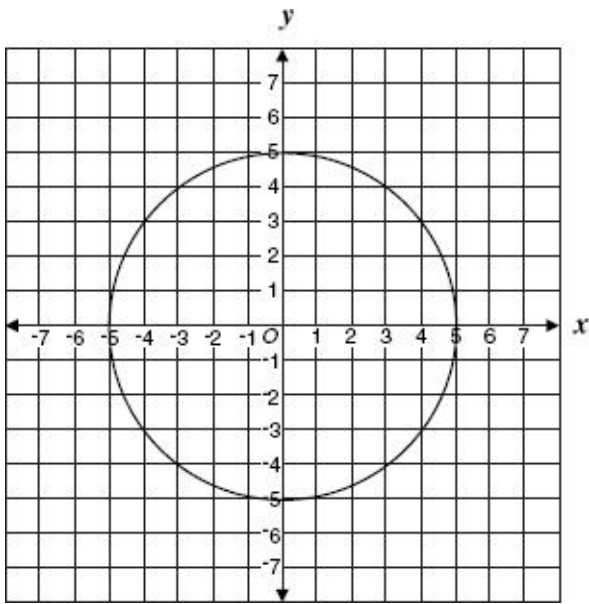
Which number is closest in value to the slope of line n ?

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

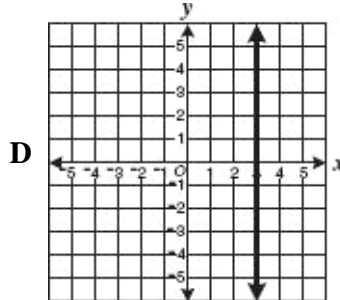
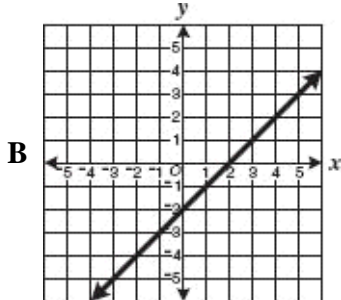
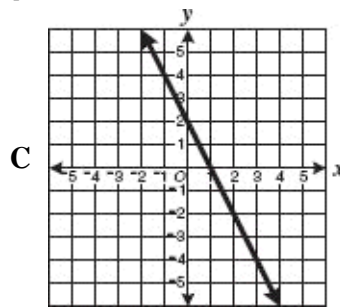
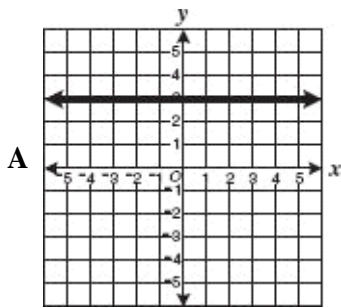
31 Loki said the following graph does *not* represent a function of x .



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?



- 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 $t = 5,100 \cdot 12$

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 ?

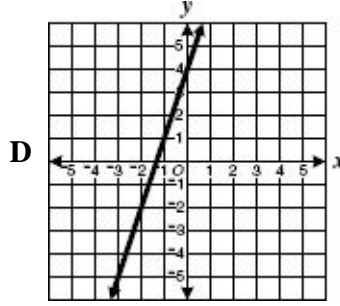
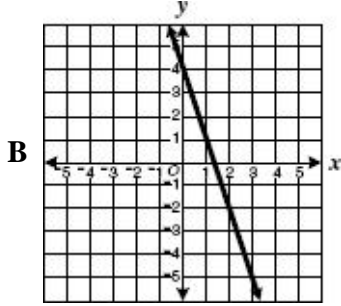
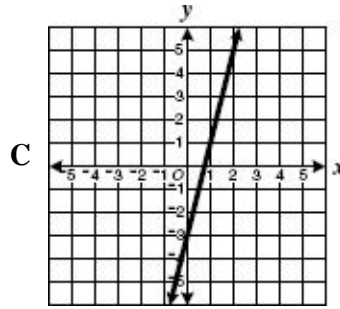
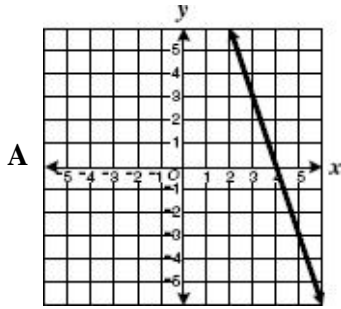
A $\{(7, -1), (7, -2), (7, -3)\}$

B $\{(1, 3), (2, 4), (3, 5)\}$

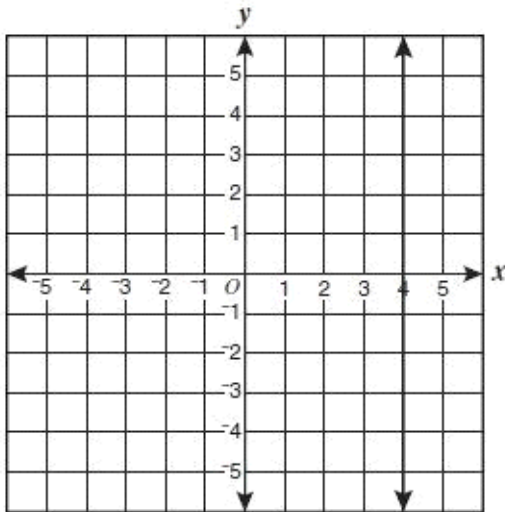
C $\{(-6, 12), (1, 8), (1, 13)\}$

D $\{(0, 2), (0, 4), (4, 0)\}$

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



49



Which equation best represents the line shown on the figure?

A $x = 4$

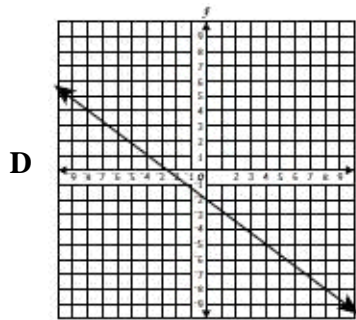
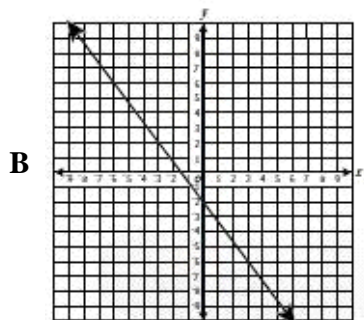
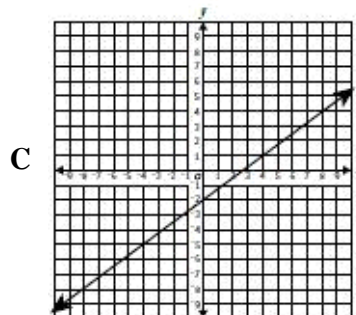
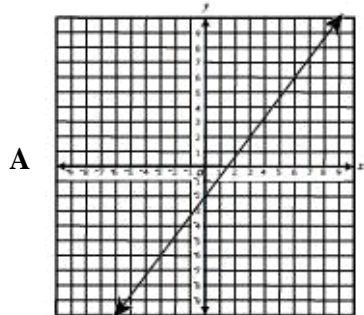
B $y = 4$

C $y = x - 4$

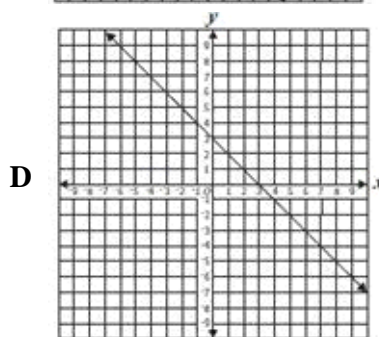
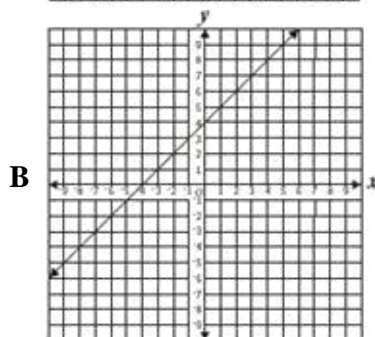
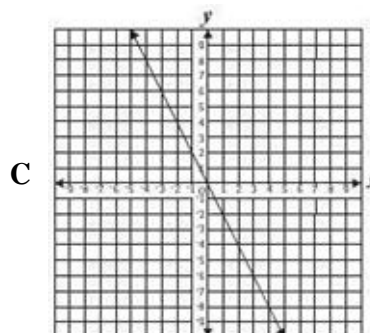
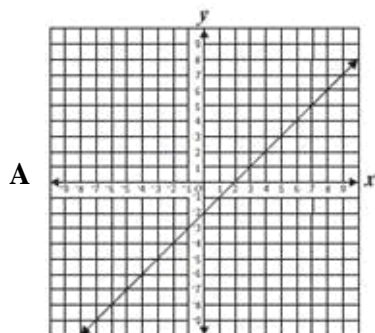
D $y = 4x$

50

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



51 Which of the following graphs shows a direct variation?



52

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

- A 21
- B 27
- C 53
- D 63

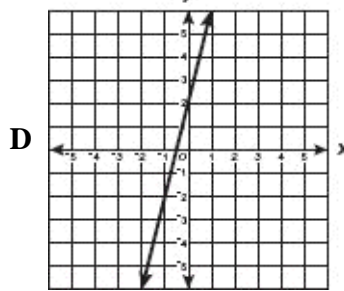
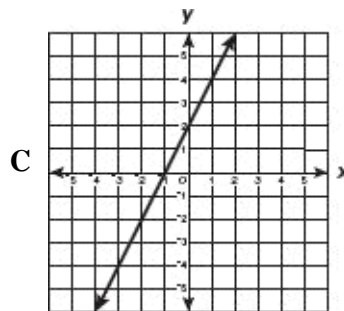
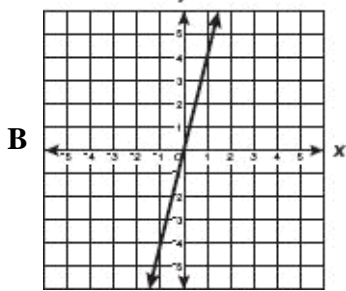
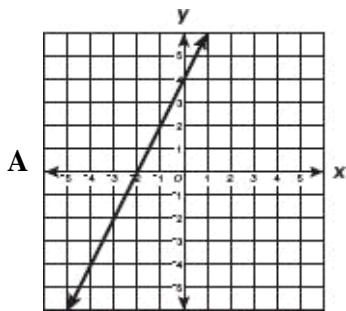
53 What is the solution to the inequality shown below?

$$-2x + 3 > 7$$

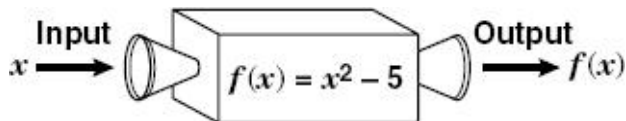
- A $x < 3$
- B $x < -2$
- C $x > 2$
- D $x < -5$

54 Which graph best represents the following function?

$$y = 4x + 2$$



55



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 $y = 7$