

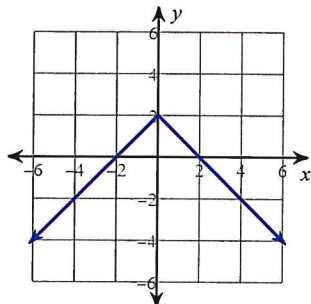
Validation Practice Test 2021

Date _____

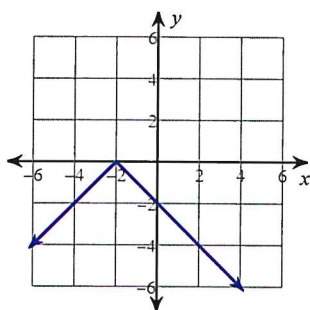
Graph each equation.

1) $y = -|x - 2|$

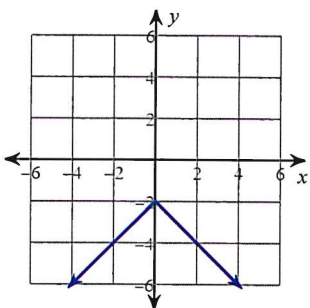
A)



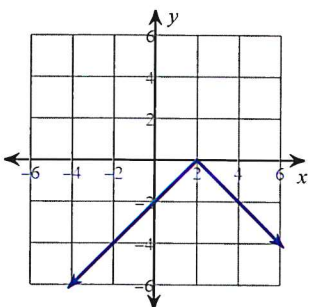
B)



C)



D)



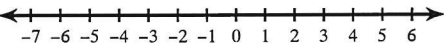
Solve each equation.

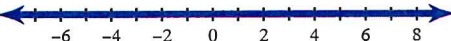
2) $|9 + 7x| = 65$

- A) $\left\{2, -\frac{8}{3}\right\}$ B) $\{8\}$
C) $\left\{8, -\frac{74}{7}\right\}$ D) $\{-1, -2\}$

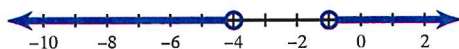
Solve each inequality and graph its solution.

3) $|-8p - 3| \leq 35$

A) No solution. : 

B) { All real numbers. } : 

C) $-\frac{19}{4} \leq p \leq 4$: 

D) $p < -4$ or $p > -1$: 

Simplify each expression.

4) $3(x - 8) + 2(3 + 5x)$

- A) $-16x$ B) $-21x$
C) $-10x$ D) $13x - 18$

Find the value of c that completes the square.

5) $x^2 - 17x + c$

- A) $\frac{225}{4}$ B) 225
C) $-\frac{15}{2}$ D) $\frac{289}{4}$

Divide.

6) $(a^2 + 3a + 3) \div (a - 1)$

A) $a + 5 + \frac{14}{a - 1}$

B) $a + 6 + \frac{13}{a - 1}$

C) $a + 3 + \frac{10}{a - 1}$

D) $a + 4 + \frac{7}{a - 1}$

Simplify.

7) $\frac{\sqrt{9}}{\sqrt{4}}$

A) $6\sqrt{2}$ B) $\frac{2}{15}$

C) $\frac{5\sqrt{2}}{6}$ D) $\frac{3}{2}$

Simplify each expression.

8) $\frac{4x}{x + 10} \div \frac{28x^2 + 8x}{49x^2 + 14x}$

A) $9x$ B) $\frac{7x}{x + 5}$

C) $\frac{7x}{x + 10}$ D) $\frac{x + 6}{7(x - 3)}$

Solve each equation.

9) $12 + 5(x + 9) = -3 + 3(6x - 6)$

A) $\{19\}$ B) $\{6\}$

C) $\{\text{All real numbers.}\}$ D) $\{1\}$

Solve each equation using the square root property.

10) $-4x^2 = 20$

A) $\{5\}$ B) $\{2, -2\}$

C) No solution. D) $\{5, -5\}$

Solve each equation with the quadratic formula.

11) $4k^2 = 11$

- A) $\{1.658, -1.658\}$
- B) $\{0.525, -9.525\}$
- C) $\{7.322, -2.322\}$
- D) $\{1.317, -2.151\}$

Solve each equation. Remember to check for extraneous solutions.

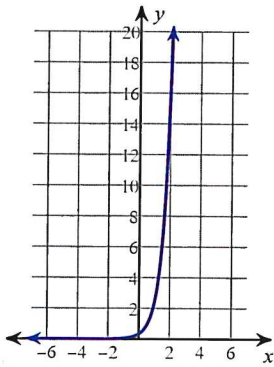
12) $-63 = -7\sqrt{-9 - 9p}$

- A) $\{-10, 7\}$
- B) $\{-10\}$
- C) $\{7\}$
- D) $\{10, 7\}$

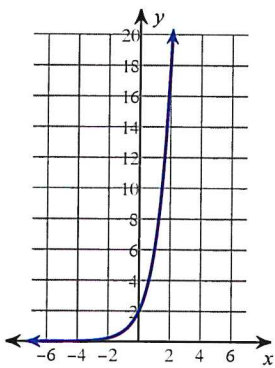
Sketch the graph of each function.

13) $y = \frac{1}{3} \cdot 7^x$

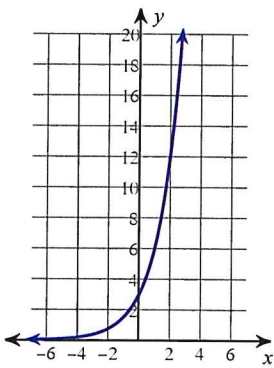
A)



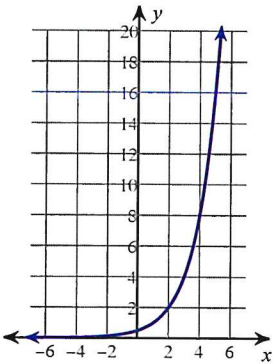
B)



C)



D)



Simplify. Your answer should contain only positive exponents.

14) $-2x^0y^5 \cdot (x^2y^3)^0$

A) $-\frac{2}{x^4}$

B) $-8y^9x$

C) $-2y^5$

D) $\frac{64x^6}{y^9}$

Factor each completely.

15) $20n^3 - 5n^2 - 4n + 1$

A) $(5n^2 - 1)(4n + 1)$

B) $(5n^2 - 1)^2$

C) $(5n^2 + 1)(4n + 1)$

D) $(5n^2 - 1)(4n - 1)$

Factor the common factor out of each expression.

16) $15x^7 + 30x + 3$

A) $6(20x^7 + 10x + 1)$

B) $3(5x^8 + 10x + 1)$

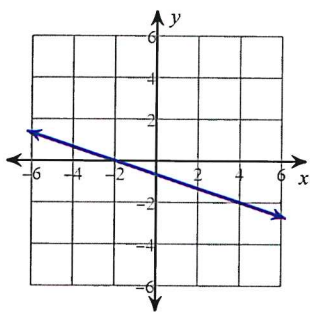
C) $3(5x^7 + 10x + 1)$

D) $3(15x^7 + 30x + 3)$

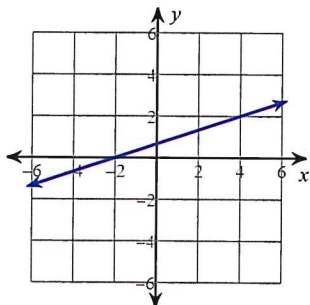
Sketch the graph of each line.

17) $2 + y = -3x$

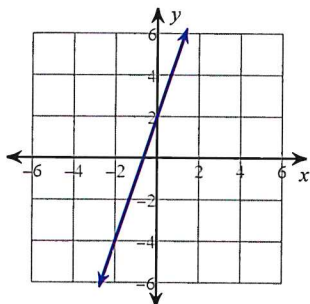
A)



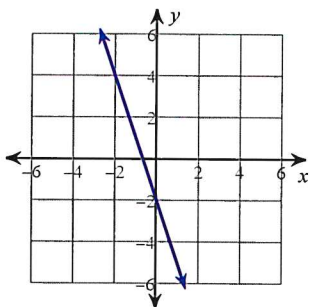
B)



C)



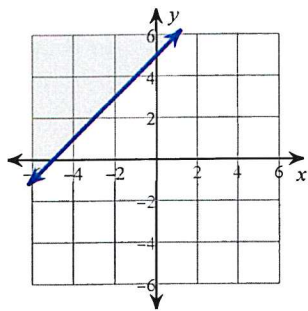
D)



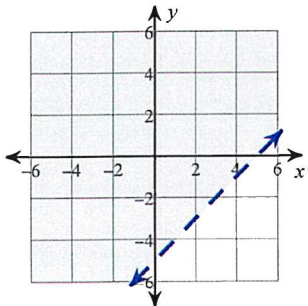
Sketch the graph of each linear inequality.

18) $y \geq x + 5$

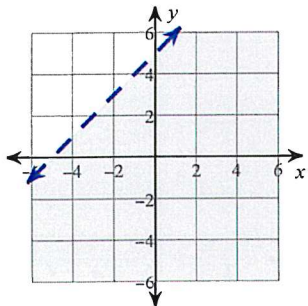
A)



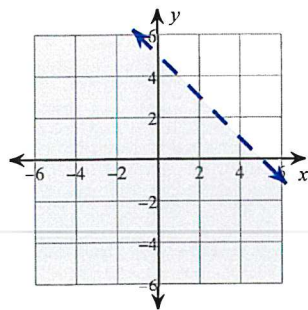
B)



C)



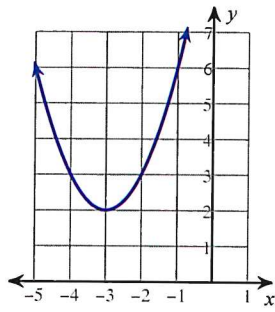
D)



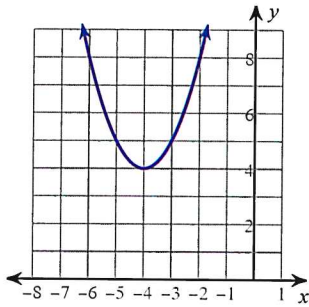
Sketch the graph of each function.

19) $y = x^2 - 6x + 13$

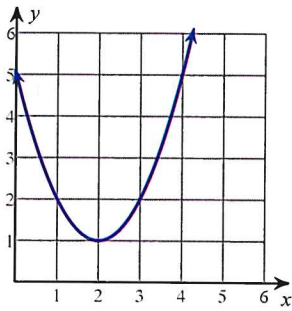
A)



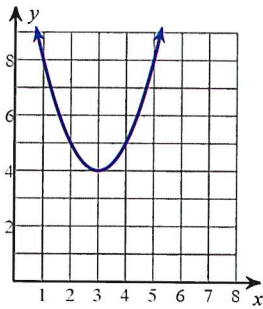
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C)



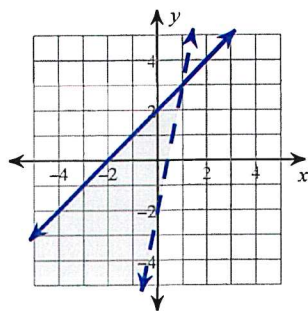
D)



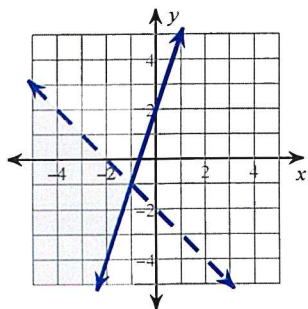
Sketch the solution to each system of inequalities.

20) $y \leq 3x + 2$
 $y < -x - 2$

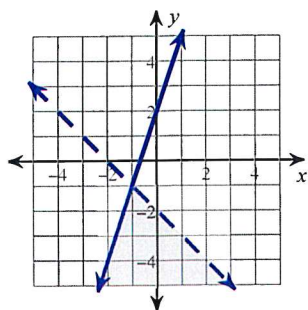
A)



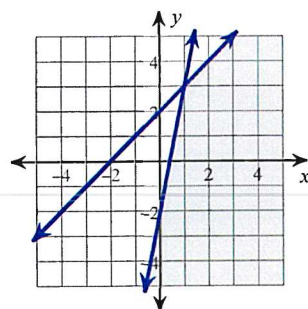
B)



C)

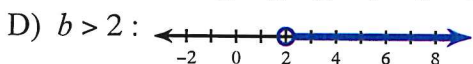
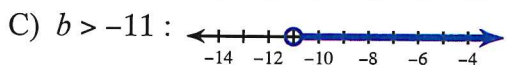
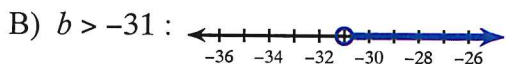
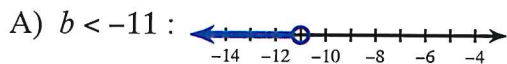


D)



Solve each inequality and graph its solution.

21) $8 - 2b > 30$



Write the slope-intercept form of the equation of the line through the given point with the given slope.

22) through: $(-2, 4)$, slope = -8

A) $y = -3x - 12$

B) $y = -8x - 12$

C) $y = 8x - 12$

D) $y = 5x - 12$

Write the slope-intercept form of the equation of the line through the given points.

23) through: $(4, -3)$ and $(-3, -4)$

A) $y = -\frac{25}{7}x + \frac{1}{7}$

B) $y = -\frac{4}{7}x - \frac{25}{7}$

C) $y = \frac{1}{7}x - \frac{25}{7}$

D) $y = \frac{4}{7}x - \frac{25}{7}$

Write the slope-intercept form of the equation of the line described.

24) through: $(-3, 0)$, parallel to $y = -2$

A) $y = 0$

B) $y = x$

C) $y = 2x$

D) $y = -x$

25) through: $(-5, 2)$, perp. to $y = \frac{5}{6}x - 1$

A) $y = -4x - \frac{6}{5}$

B) $y = -\frac{6}{5}x - 4$

C) $y = -x - \frac{6}{5}$

D) $y = x - \frac{6}{5}$

Find each product.

- 26) $(3k + 4)(-2k - 3)$
A) $10k^2 - 37k + 30$
B) $-6k^2 - k + 12$
C) $-6k^2 - 17k - 12$
D) $-6k^2 - 12$

Simplify. Write each answer in scientific notation.

- 27) $\frac{2.4 \times 10^5}{1.6 \times 10^{-1}}$
A) 3.84×10^5 B) 1.5×10^6
C) 3.84×10^4 D) 1.5×10^5

Factor each completely.

- 28) $6x^2 - 44x + 80$
A) $2(3x - 10)(x - 4)$
B) $(7x + 10)(x - 7)$
C) $2(3x + 10)(x - 4)$
D) $(7x - 9)(x - 9)$

Solve each system using the method of your choice.

- 29) $-1 + y = -\frac{1}{2}x$
 $16 = -4y + 3x$
A) $(5, -1)$ B) $(4, -1)$
C) $(-5, -1)$ D) $(-1, -5)$

Factor each completely.

- 30) $9m^2 + 30m + 25$
A) $(9m + 25)^2$
B) $(4m + 3)^2$
C) $(3m - 5)(3m + 5)$
D) $(3m + 5)^2$

Find each percent change. State if it is an increase or a decrease.

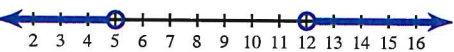
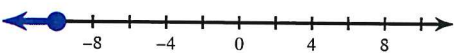
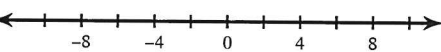
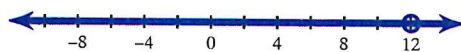
- 31) From 11 to 55
- A) 400% increase
 - B) 44% decrease
 - C) 500% increase
 - D) 180% increase

Solve each problem.

- 32) 19 is what percent of 73?
- A) 214%
 - B) 26%
 - C) 0.26%
 - D) 384.2%

Solve each compound inequality and graph its solution.

33) $5n + 3 < 28$ or $-12n + 2 < -142$

- A) $n < 5$ or $n > 12$: 
- B) $n \leq -10$: 
- C) No solution. : 
- D) { All real numbers. } : 

- 34) Paul and Natalie each improved their yards by planting hostas and shrubs. They bought their supplies from the same store. Paul spent \$114 on 3 hostas and 12 shrubs. Natalie spent \$154 on 7 hostas and 14 shrubs. Find the cost of one hosta and the cost of one shrub.

- A) hosta: \$6, shrub: \$8
- B) hosta: \$4, shrub: \$7
- C) hosta: \$7, shrub: \$5
- D) hosta: \$5, shrub: \$4

Solve each system by elimination.

35) $7x - 8y = -24$
 $-2x + 5y = 15$

- A) $(-4, -3)$
- B) $(1, -7)$
- C) $(0, 3)$
- D) $(-7, -5)$

Solve each system by substitution.

36) $x + 2y = -14$
 $8x + 2y = 0$

- A) $(2, -8)$
- B) $(2, 8)$
- C) $(3, 8)$
- D) $(-8, 2)$

Evaluate each expression.

37) $\left(2\frac{3}{4} + \frac{1}{6}\right) \times 1\frac{5}{6}$

- A) $\frac{253}{72}$ B) $\frac{265}{72}$
C) $\frac{241}{72}$ D) $\frac{385}{72}$

Find each product.

38) $(8m + 8n)(2m - 7n)$

- A) $4m^2 - 11mn + 6n^2$
B) $16m^2 - 56n^2$
C) $4m^2 + 5mn - 6n^2$
D) $16m^2 - 40mn - 56n^2$

39) $(8v^2 + 2v - 1)(6v - 1)$

- A) $48v^3 + 4v^2 - 8v + 1$
B) $8v^3 - 18v^2 + 1$
C) $40v^3 + 13v^2 - 39v - 8$
D) $6v^3 + 14v^2 - 30v + 12$

Simplify each expression.

40) $\frac{4n^2}{n^2 + 9n + 20} \div \frac{1}{n^2 + 8n + 16}$

- A) $\frac{8}{7}$ B) $\frac{n+3}{5}$
C) $\frac{n+4}{6}$ D) $\frac{4n^2(n+4)}{n+5}$

Evaluate each using the values given.

41) $(b)\left(a - \left(\frac{a}{3} + a\right)\right)$; use $a = 9$, and $b = 4$

- A) -21 B) -9
C) -12 D) -17

Simplify.

42) $3\sqrt{648n^2}$

- A) $-6n^2\sqrt{3n}$ B) $-15n^2\sqrt{5}$
C) $54n\sqrt{2}$ D) $-21n\sqrt{5}$

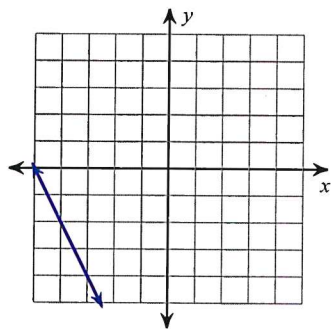
Find the value of x or y so that the line through the points has the given slope.

43) $(-13, -11)$ and $(-15, y)$; slope: $\frac{7}{2}$

- A) -8 B) -18
C) 7 D) -17

Find the slope of each line.

44)



- A) 2 B) -2
C) $-\frac{1}{2}$ D) $\frac{1}{2}$

Find the discriminant of each quadratic equation then state the number and type of solutions.

45) $-4k^2 - 6k + 6 = 2$

- A) 88; one real solution
B) 100; two real solutions
C) 100; two imaginary solutions
D) 100; one real solution

Solve each equation.

46) $8(x + 7) = -12(x + 2)$

- A) $\{-4\}$
B) $\{-14\}$
C) $\{\text{All real numbers.}\}$
D) $\{-7\}$

Write the standard form of the equation of the line through the given points.

47) through: $(-4, 5)$ and $(0, 0)$

- A) $4x + 3y = 0$
B) $3x - 4y = -3$
C) $5x + 4y = 0$
D) $3x + 4y = -3$

Write the standard form of the equation of each line.

48) $y = \frac{1}{3}x - 3$

- A) $5x + 15y = -3$
- B) $x - 3y = 9$
- C) $3x + 2y = 9$
- D) $2x - 3y = -9$

Solve each proportion.

49) $\frac{7}{x+2} = -\frac{3}{x-6}$

- A) $\{3.2\}$
- B) $\{-4.1\}$
- C) $\{3.6\}$
- D) $\{-7.9\}$

Solve each equation.

50) $9(2x + 11) = 3(6x + 2)$

- A) $\{9\}$
- B) $\{-13\}$
- C) No solution.
- D) $\{11\}$

51) $\frac{11}{10}x - \frac{2456}{99} = -\frac{39}{10}x + \frac{14}{9}$

- A) $\left\{\frac{7}{9}\right\}$
- B) $\left\{9\frac{5}{6}\right\}$
- C) $\left\{\frac{58}{11}\right\}$
- D) $\{\text{All real numbers.}\}$

Factor each completely.

52) $9m^2 - 16m - 4$

- A) $(5m + 2)(2m + 9)$
- B) $4(m - 5)(10m + 9)$
- C) $2m(5m - 8)$
- D) $(m - 2)(9m + 2)$

53) $54n^2 - 372n + 288$

- A) $6(n - 6)(9n - 8)$
- B) $(n + 9)(9n - 2)$
- C) $10n(n - 10)$
- D) $18(3n - 2)(n + 8)$

Find each product.

54) $(2x - 7y)(2x + 7y)$

- A) $16x^2 - 36y^2$
- B) $4x^2 + 28xy + 49y^2$
- C) $4x^2 - 28xy + 49y^2$
- D) $4x^2 - 49y^2$

Evaluate each expression.

55) $7 - -4 - \left| -\frac{18}{9} \right|$

- A) 13 B) 18
C) 12 D) 9

Solve each equation for the indicated variable.

56) $g = ca + ba$, for a

- A) $a = \frac{c+b}{g}$ B) $a = \frac{g}{c-b}$
C) $a = \frac{g}{c+b}$ D) $a = \frac{c-b}{g}$

Simplify. Your answer should contain only positive exponents.

57) $\frac{2yx^{-4} \cdot 2xy^{-3}}{xy^{-4}}$

- A) $\frac{4x^3}{3y^3}$ B) $6x^2y^2$
C) $\frac{2}{9y^7x^7}$ D) $\frac{4y^2}{x^4}$

Find the slope of the line through each pair of points.

58) $(11, 3), (-17, 10)$

- A) $-\frac{1}{4}$ B) -4
C) $\frac{1}{4}$ D) 4

Factor each completely.

59) $25x^2 - 4$

- A) $(3x + 5)(3x - 5)$
B) $(5x + 2)^2$
C) $(5x + 4)^2$
D) $(5x + 2)(5x - 2)$

Name the set or sets to which each number belongs.

60) $\sqrt{50}$

- A) Q, R B) Z, Q, R
C) W, Z, Q, R D) I, R

61) 0

- A) I, R B) N, W, Z, Q, R
C) Z, Q, R D) W, Z, Q, R

62) Which set of ordered pairs does not represent a function?

- A) (0,1) (2,3) (5,6) (8,1)
B) (1,2) (1,-1) (1, 6) (1,10)
C) (5, 3)(-1,8) (0,0) (5,4)
D) (1,2) (-3, 2) (5,2) (3,2)