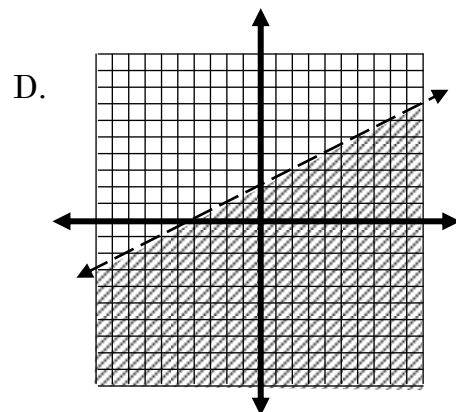
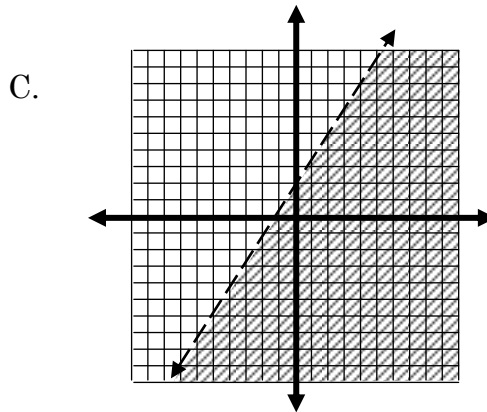
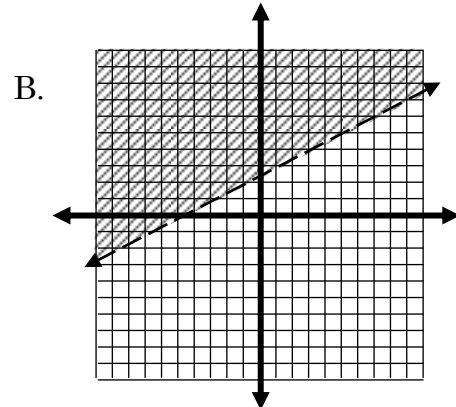
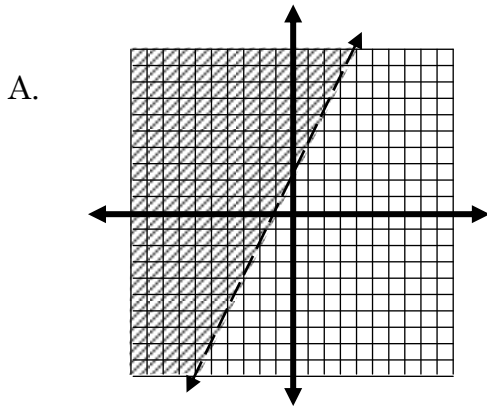


TOLLESON UNION HIGH SCHOOL DISTRICT
8th Grade Algebra 1 Study Guide

1. Which of these graphs correctly represents the inequality $y < \frac{3}{2}x + 2$?



2. Which method represents a correct way to solve the equation?

Method A
 $5(x-3) = 5$
 $x-3 = 25$
 $x = 28$

Method B
 $5(x-3) = 5$
 $5x-15 = 5$
 $5x = 20$
 $x = 4$

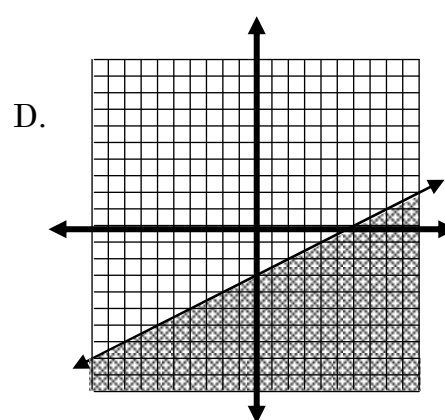
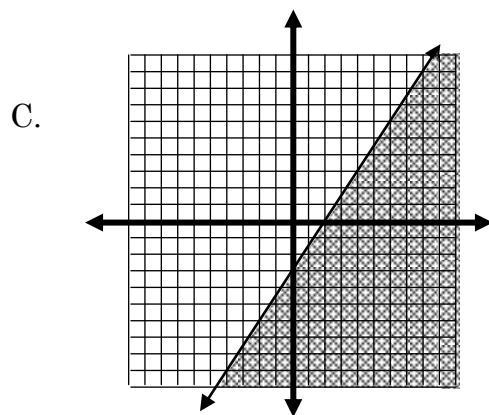
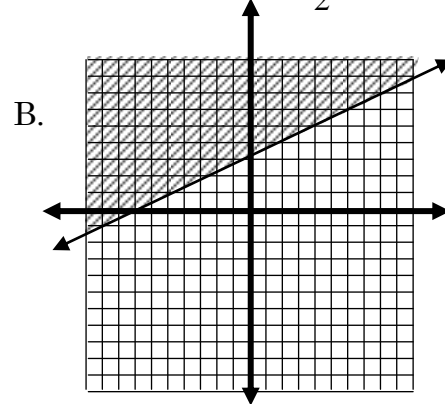
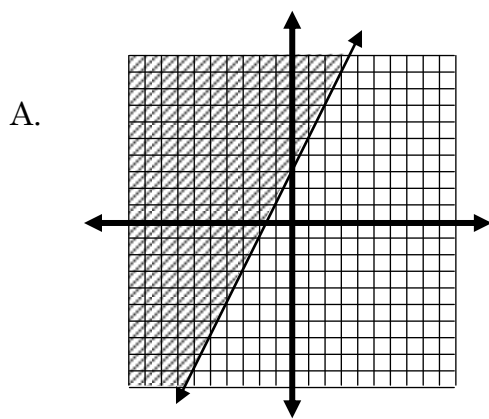
Method C
 $5(x-3) = 5$
 $5x+15 = 5$
 $5x = -10$
 $x = -2$

Method D
 $5(x-3) = 5$
 $5x-15 = 5$
 $5x = 20$
 $x = 100$

- A) Method A
 C) Method C

- B) Method B
 D) Method D

3. Which of these graphs correctly represents the inequality $y - 3 \geq \frac{1}{2}x$?



4. Which method represents a correct way to solve the equation?

Method A
 $-3(x+2) = 9$
 $-3x+6 = 9$
 $-3x = 3$
 $x = -1$

Method B
 $-3(x+2) = 9$
 $3x-6 = 9$
 $3x = 15$
 $x = 5$

Method C
 $-3(x+2) = 9$
 $-3x-6 = 9$
 $-3x = 15$
 $x = -5$

Method D
 $-3(x+2) = 9$
 $-3x-6 = 9$
 $-3x = 15$
 $x = 5$

A) Method A

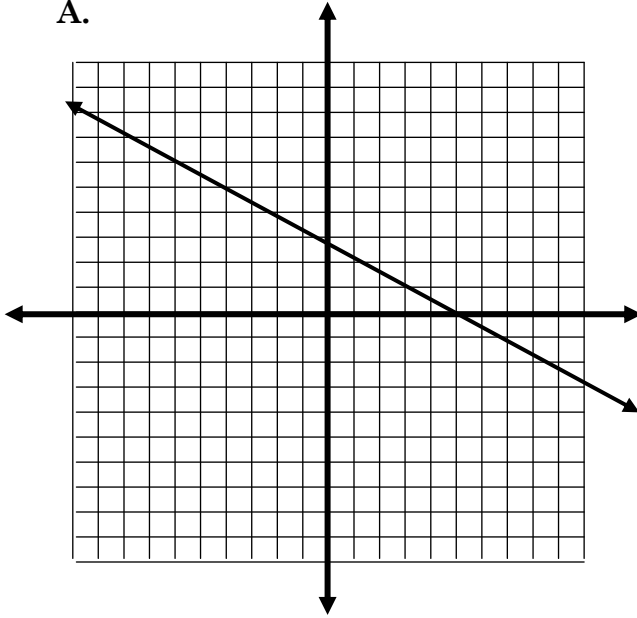
B) Method B

C) Method C

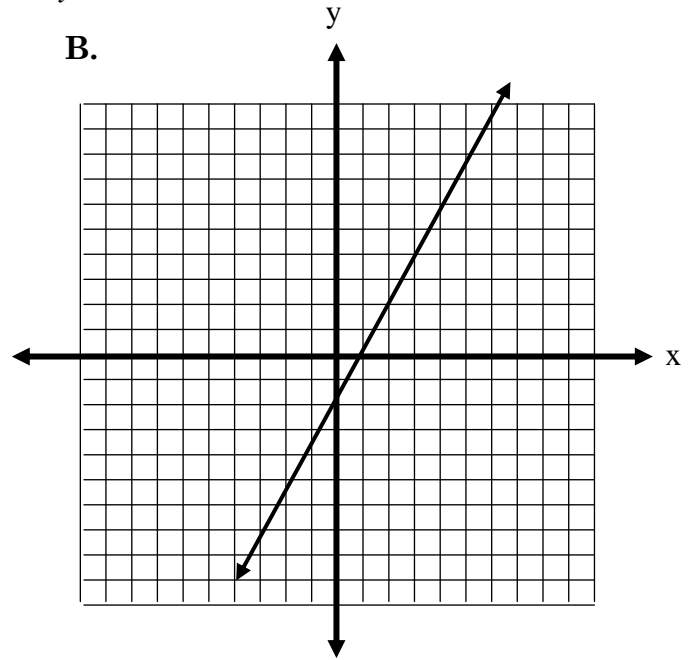
D) Method D

5. Choose the correct graph for the equation $-y = 2x - 3$

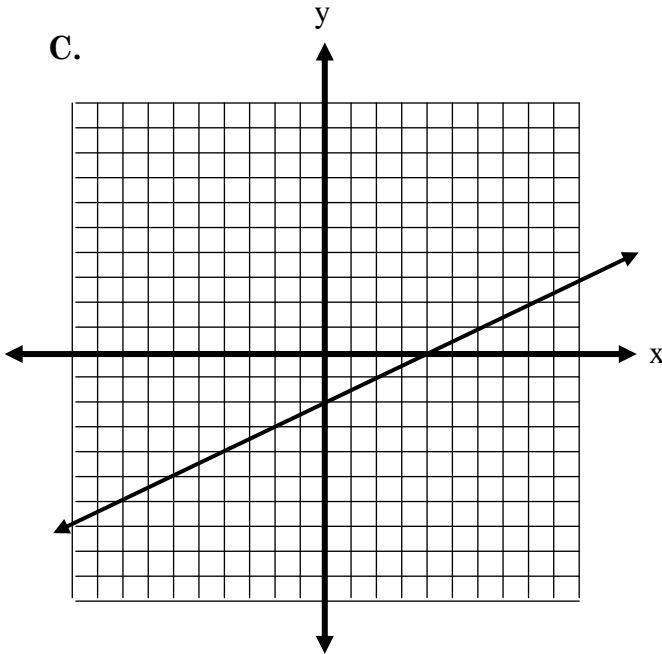
A.



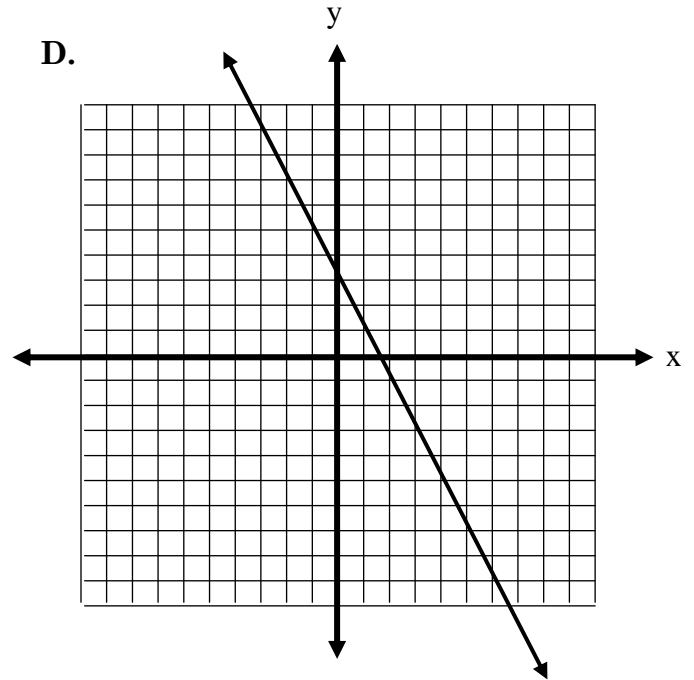
B.



C.



D.



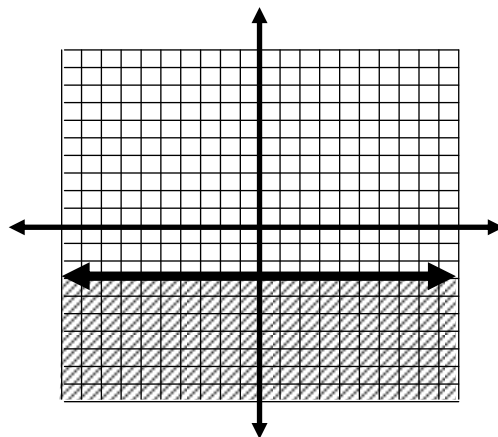
6. Find the equation of the line.

A. $y \leq -3$

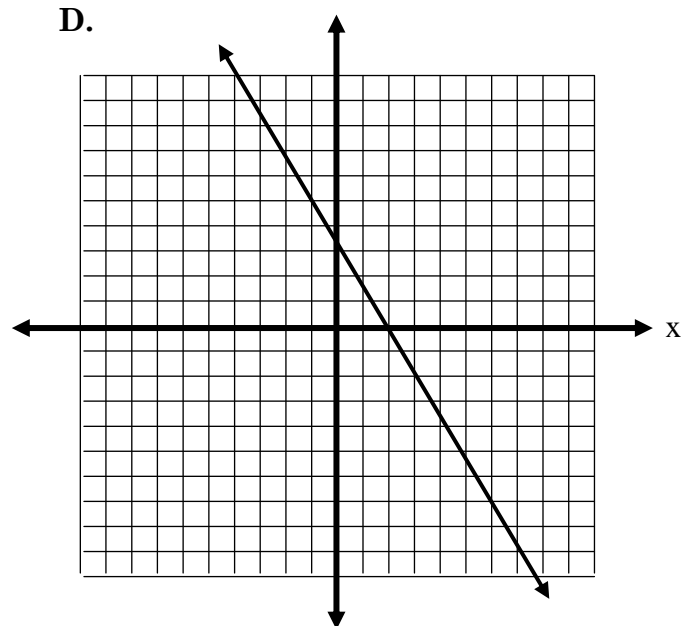
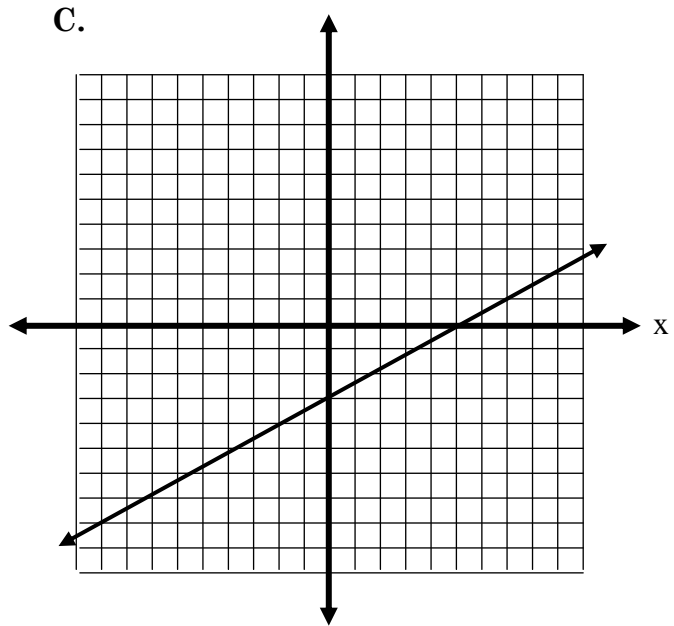
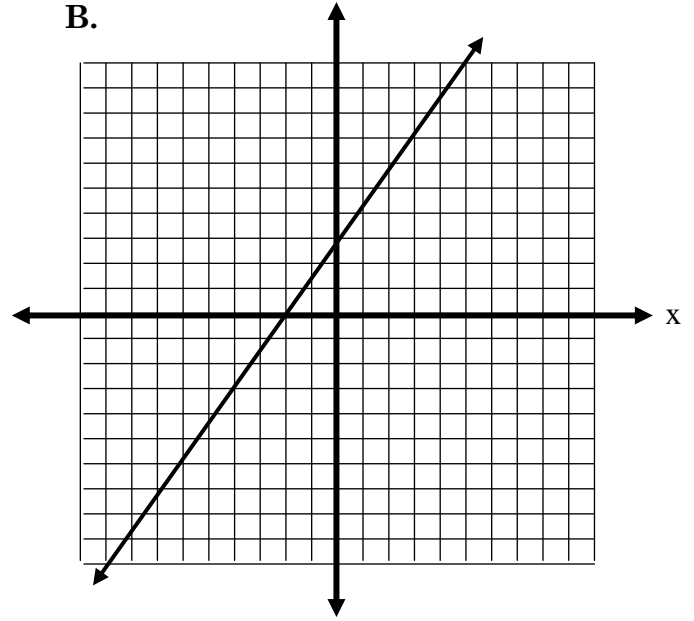
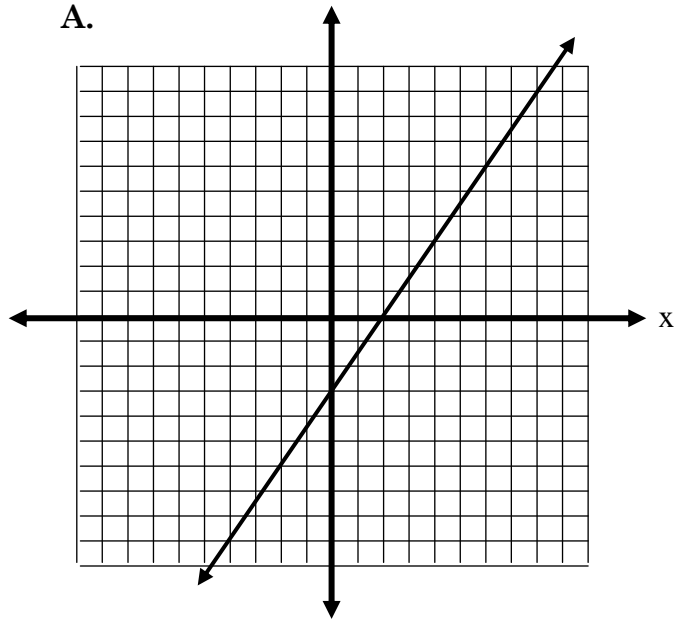
B. $x < 3$

C. $x \leq -3$

D. $y < 3$

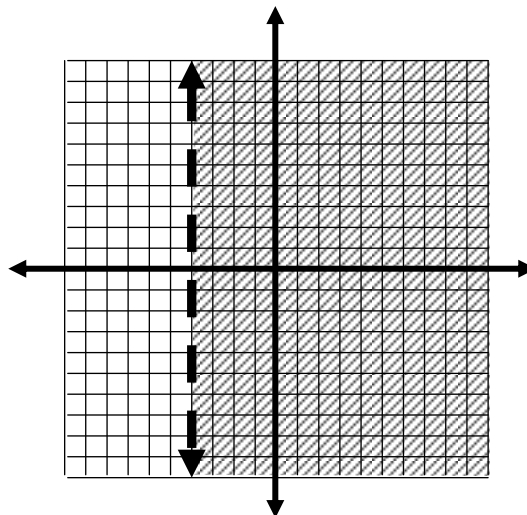


7. Choose the correct graph for the equation $3x - 2y = 6$



8. Find the equation of the line.

- A. $y < -4$
- B. $x > -4$
- C. $x \leq -4$
- D. $y \leq -4$



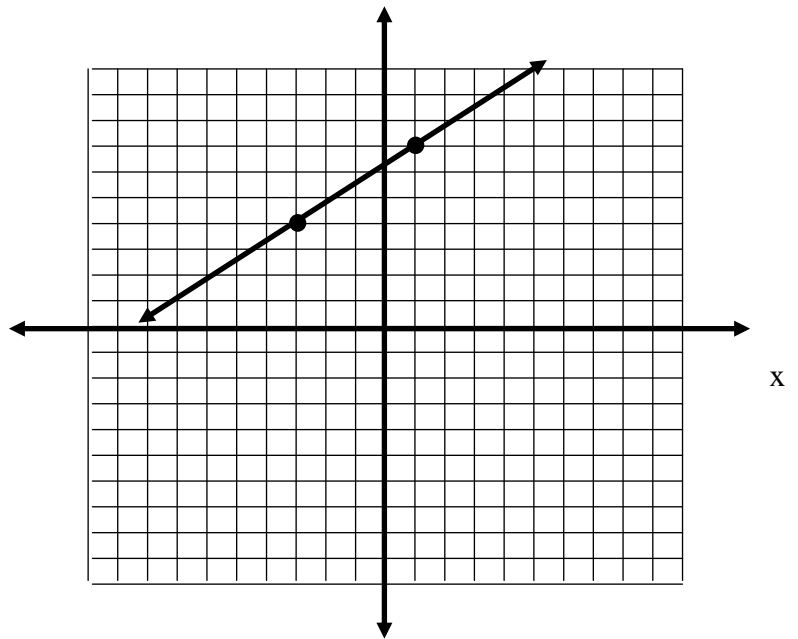
9. Find the slope of the line.

A. $m = \frac{3}{4}$

B. $m = -\frac{3}{4}$

C. $m = -\frac{4}{3}$

D. $m = \frac{4}{3}$



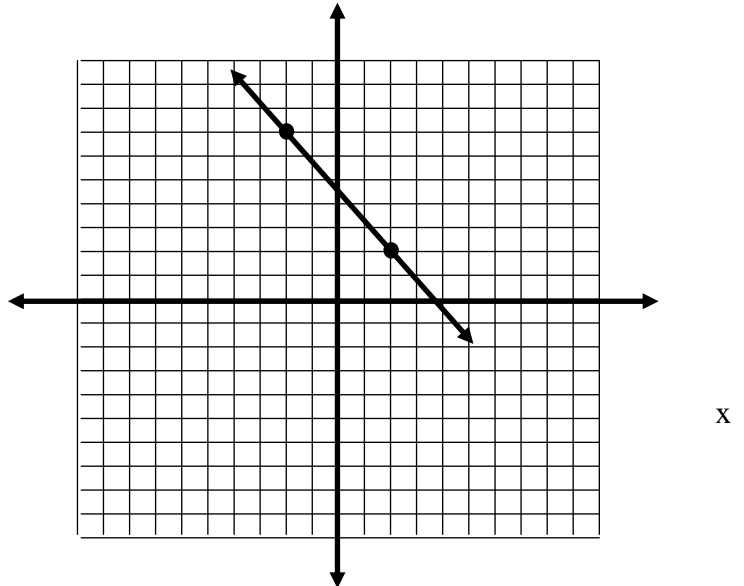
10. Find the slope of the line.

A. $m = \frac{4}{5}$

B. $m = -\frac{4}{5}$

C. $m = -\frac{5}{4}$

D. $m = \frac{5}{4}$



11. Solve: $x^2 = 3x + 28$

A. $x = 4$ and $x = -7$

B. $x = -4$ and $x = 7$

C. $x = -4$ and $x = -7$

D. $x = 4$ and $x = 7$

12. Solve: $x^2 - 4x = 12$

A. $x = 4$ and $x = 3$

B. $x = -4$ and $x = -3$

C. $x = -2$ and $x = -6$

D. $x = -2$ and $x = 6$

13. What is the domain and range of the function shown on the graph?

A. Domain: {all real numbers}

Range: $\{y: y \geq 1\}$

B. Domain: $\{x: x \geq 1\}$

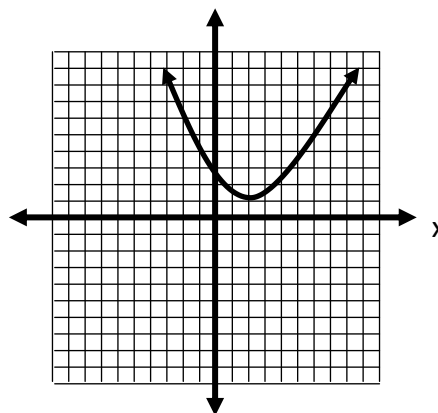
Range: {all real numbers}

C. Domain: {all real numbers}

Range: {all real numbers}

D. Domain: $\{x: x \geq 2\}$

Range: $\{y: y \leq 1\}$



14. What is the domain and range of the function shown on the graph?

A. Domain: $\{x: x \geq -3\}$

Range: $\{y: y \geq -2\}$

B. Domain: {all real numbers}

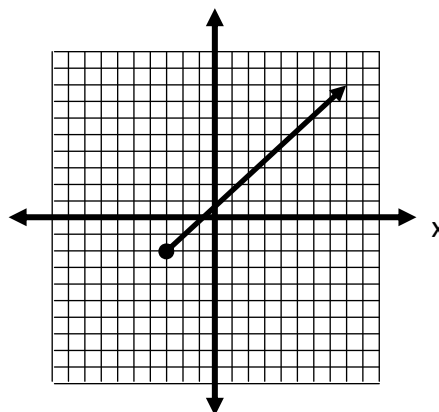
Range: {all real numbers}

C. Domain: $\{x: x \geq -3\}$

Range: {all real numbers}

D. Domain: $\{x: x \geq -2\}$

Range: $\{y: y \geq -3\}$



15. If $g(x) = 3x^2 - 4x + 1$, what is the value of $g(-2)$?

A. $g(-2) = 21$

B. $g(-2) = 45$

C. $g(-2) = -3$

D. $g(-2) = -27$

16. If $f(x) = -5x + 6$, what is the value of $f(-3)$?

A. -9

B. 15

C. 21

D. -23

17. Simplify the expression: $\left(\frac{2y^2}{5x}\right)^3$

A. $\frac{6y^5}{15x}$

C. $\frac{8y^6}{125x^3}$

B. $\frac{6y^5}{5x^3}$

D. $\frac{8y^5}{125x}$

18. Simplify the expression: $\left(\frac{3y^2}{xy^7}\right)^2$

A. $\frac{6}{xy^7}$

C. $\frac{6}{x^2y^{10}}$

B. $\frac{9y^4}{x^{16}}$

D. $\frac{9}{x^2y^{10}}$

19. What is the solution to the inequality below?

$$\boxed{-5x + 8 \leq 13}$$

A. $x \leq -1$

B. $x \leq 1$

C. $x \geq 1$

D. $x \geq -1$

20. What is the solution to the inequality below?

$$\boxed{5x - 3 < 12}$$

A. $x < 3$

B. $x > 5$

C. $x > 3$

D. $x < 5$

21. Simplify the expression: $\frac{4x^3y^3}{2xy} \cdot \frac{5xy^2}{2y}$

A. $10x^4y^5$

C. $10x^3y^3$

B. $5x^3y^3$

D. $5x^4y^5$

27. Which equation shows the formula correctly solved for W ?

$$P = 2L + 2W$$

- A. $W = P - L$ B. $W = \frac{P - 2L}{2}$ C. $W = 2(P - L)$ D. $W = P - 2L$

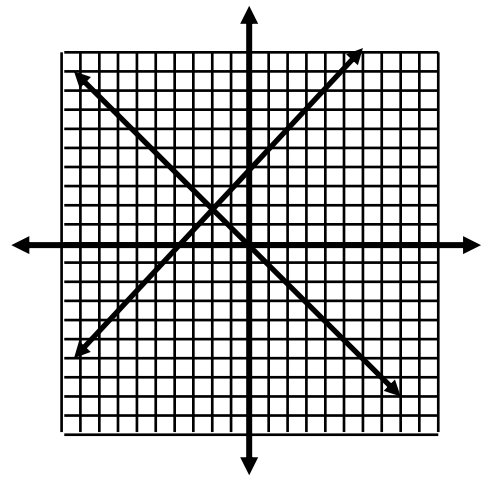
28. Which equation shows the formula correctly solved for B ?

$$A = 4B - C$$

- A. $B = \frac{A + C}{4}$ B. $B = \frac{A}{4} + C$ C. $B = 4A + C$ D. $B = A + \frac{C}{4}$

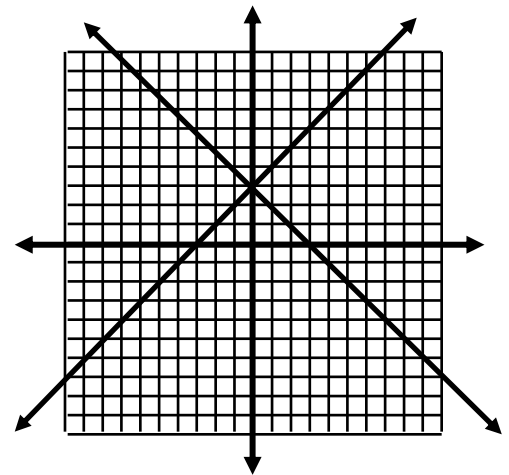
29. Identify the best solution of this system.

- A. $(2, -2)$
B. $(-2, 2)$
C. $(-2, -2)$
D. $(2, 2)$



30. Identify the best solution of this system.

- A. $(3, 0)$
B. $(-3, 0)$
C. $(0, 3)$
D. $(0, -3)$



31. Factor the expression: $25c^2 - 49$

- A. Prime C. $(5c + 7)(5c + 7)$
B. $(5c + 7)(5c - 7)$ D. $(5c - 7)(5c - 7)$

32. Factor the expression: $3c^2 - 4c - 7$

A. $(c + 1)(3c - 7)$

C. $c - 1 \quad 3c - 7$

B. $(3c + 1)(c - 7)$

D. $c + 1 \quad 3c + 7$

33. Solve: $2x^2 - x - 3 = 0$

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

C. $x = \frac{1}{2}$ and $x = 1$

B. $x = 3$ and $x = -2$

D. $x = 2$ and $x = -3$

34. Solve: $4x^2 + 5x - 6 = 0$

A. $x = 2$ and $x = -\frac{3}{4}$

C. $x = -2$ and $x = \frac{3}{4}$

B. $x = -4$ and $x = \frac{3}{2}$

D. $x = 4$ and $x = -\frac{3}{2}$

35. Simplify the expression: $-3a^6b^3$

A. $-9a^{18}b$

C. $-27a^{18}b^3$

B. $-9a^9b^4$

D. $-27a^9b^4$

36. Simplify the expression: $5x^4y^2z^3^2$

A. $10x^8y^4z^6$

C. $10x^6y^4z^5$

B. $25x^8y^4z^6$

D. $25x^6y^4z^5$

37. Solve: $3x^2 = 2x + 1$

A. $x = -1$ and $x = \frac{1}{3}$

C. $x = 1$ and $x = -\frac{1}{3}$

B. $x = -1$ and $x = 3$

D. No real solutions

38. Solve: $3x^2 + 4 = 8x$

A. $x = 2$ and $x = \frac{2}{3}$

C. $x = 1$ and $x = -\frac{1}{2}$

B. $x = -2$ and $x = -\frac{2}{3}$

D. No real solutions

39. What is the solution of the equation?

$$4(3x-1) = 8$$

A. $x = \frac{3}{4}$

B. $x = 3$

C. $x = \frac{1}{3}$

D. $x = 1$

40. What is the solution of the equation ?

$$2(3x-2) = 14$$

A. $x = 3$

B. $x = \frac{8}{3}$

C. $x = 2$

D. $x = 1$

41. Simplify the expression: $\frac{x^6}{x^{-3}}$

A. x^9

C. x^3

B. $\frac{x^3}{x}$

D. x^2

42. Simplify the expression: $\frac{16x^5y^8}{4x^7y^4}$

A. $\frac{4y^4}{x^2}$

C. $\frac{4x^2}{y^4}$

B. $\frac{12x^2}{y^4}$

D. $\frac{12y^4}{x^2}$

43. What value of x makes the proportion true?

$$\frac{x}{56} = \frac{-5}{8}$$

A. $\frac{5}{7}$

B. 35

C. $-\frac{5}{7}$

D. -35

44. What value of x would make the following proportion true?

$$\frac{3}{x} = \frac{-5}{15}$$

A. $x = 9$

B. $x = -9$

C. $x = 40$

D. $x = -1$

45. What is simplest form of the given expression? $\sqrt{16x^6}$

A. $4x^4$

C. $4x^3$

B. $4x$

D. $4\sqrt{x^3}$

46. What is simplest form of the given expression? $\sqrt{48y^2}$

A. $4y\sqrt{3}$

C. $24y\sqrt{2}$

B. $24\sqrt{2y}$

D. $4\sqrt{3y}$

47. Evaluate the expression: $1.4 \times 10^4 \bullet 7.6 \times 10^3$

A. 1.064×10^8

C. 10.64×10^7

B. 1.064×10^6

D. 10.64×10^{12}

48. Evaluate the expression: $4 \times 10^{-2} \bullet 3 \times 10^6$

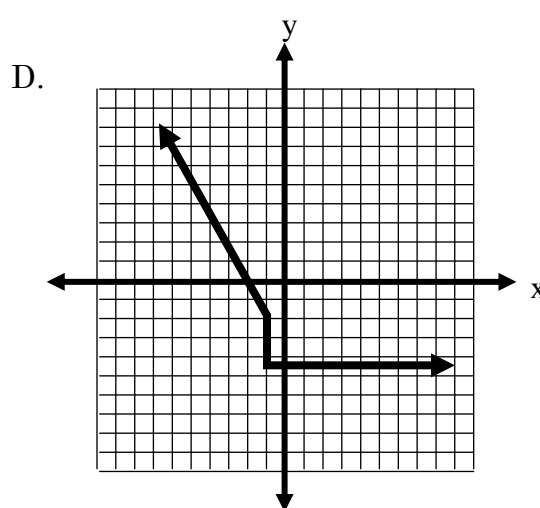
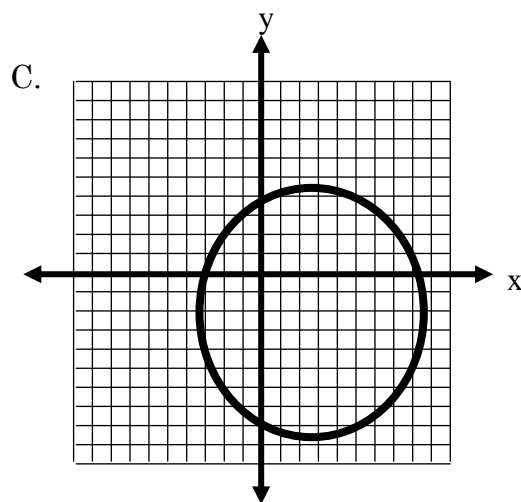
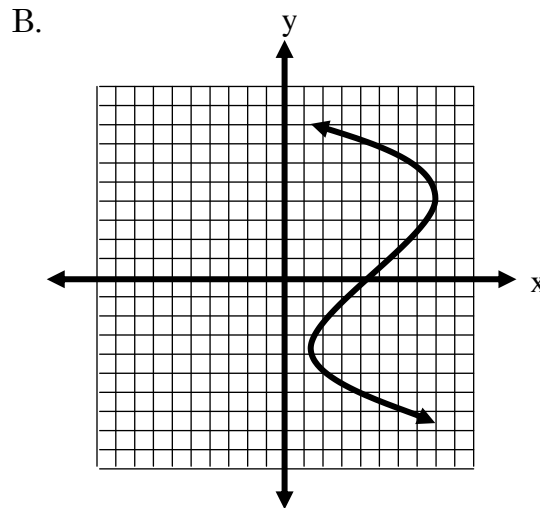
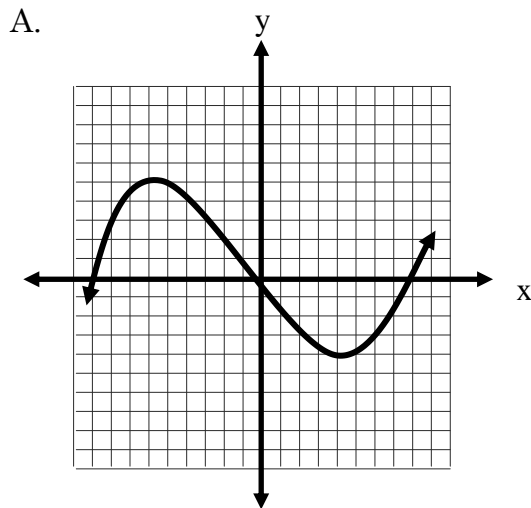
A. 1.2×10^3

C. 1.2×10^5

B. 12×10^4

D. 12×10^{-12}

49. Determine which represents a function:



50. Write the equation in slope-intercept form.

$$\boxed{-12x + 6y = 12}$$

A. $y = 3x - 4$

B. $y = -2x + 2$

C. $y = 2x + 2$

D. $y = x + 6$

51. Write the equation in slope-intercept form.

$$\boxed{2x - 2y = 6}$$

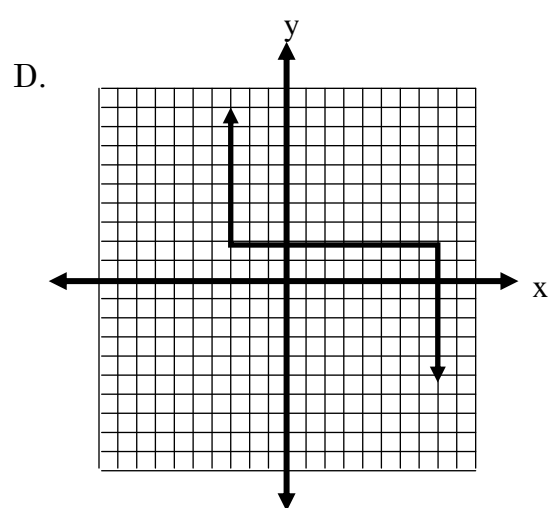
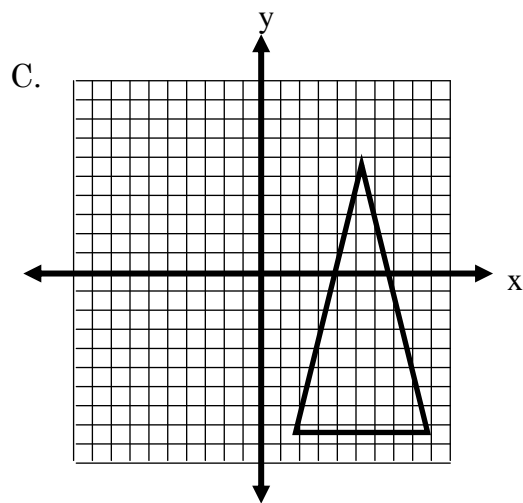
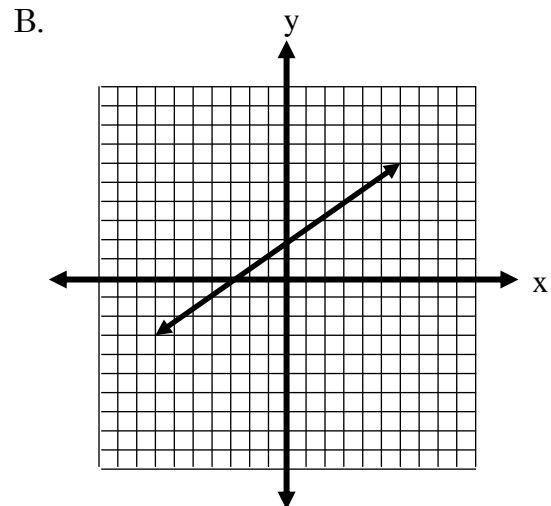
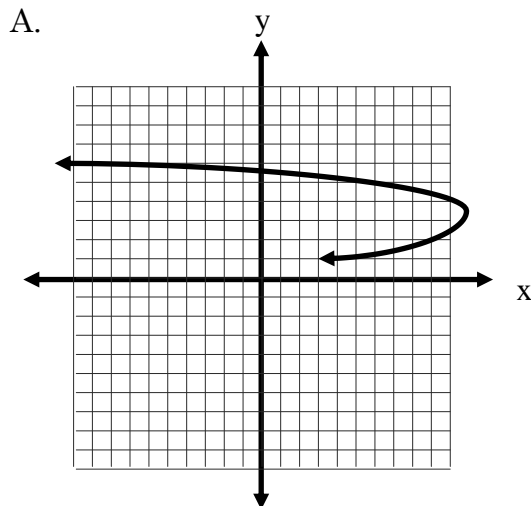
A. $y = x + 3$

B. $y = -x - 3$

C. $y = -x + 3$

D. $y = x - 3$

52. Determine which represents a function:



53. Solve: $x^2 + 7x + 12 = 0$

A. $x = -2$ and $x = -6$

B. $x = 6$ and $x = 2$

C. $x = -4$ and $x = -3$

D. $x = 4$ and $x = 3$

54. Solve: $2x^2 - x - 3 = 0$

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

B. $x = -\frac{3}{2}$ and $x = 1$

C. $x = -\frac{3}{2}$ and $x = -1$

D. $x = \frac{3}{2}$ and $x = 1$

55. Evaluate the expression: 4^{-2}

A. $-\frac{1}{16}$

B. $\frac{1}{16}$

C. 16

D. -16

56. Evaluate the expression: $\sqrt{36}^{-2}$

A. $-\frac{1}{6}$

C. 0.06

B. $\frac{1}{36}$

D. - 12

57. An airline charges \$200 plus \$25 per bag for a flight from Phoenix to Denver.

Which equation best expresses the relationship between the cost, c , of flying to Denver in terms of the number of bags, b , a passenger carries ?

A. $c = 200b + 25$

B. $c = 25b + 200$

C. $c = 25b + 225$

D. $c = 225b$

58. A car rental company charges \$50 to rent a car and \$2.00 for each mile that the car is driven.

Which equation best represents the relationship between the cost, c , of renting a car in terms of the number of miles, m , the car is driven ?

A. $c = 2m + 50$

B. $c = 50m + 2$

C. $c = 52m$

D. $c = 2m + 52$

59. Solve for x .

$$\frac{1}{2}(8x+4) = 10$$

A. $x = \frac{3}{2}$

B. $x = \frac{1}{8}$

C. $x = 3$

D. $x = 2$

60. Solve for x .

$$\frac{1}{2}(10x-2) = 19$$

A. $x = 2$

B. $x = 4$

C. $x = \frac{21}{5}$

D. $x = \frac{18}{5}$

61. What is the solution to the inequality below?

$$2x - 3 \leq 4x + 7$$

A. $x \leq -5$

B. $x \geq -5$

C. $x \geq 5$

D. $x \leq -\frac{5}{3}$

62. What is the solution to the inequality below?

$$4x - 3 < -x + 12$$

A. $x < 3$

B. $x > 5$

C. $x > 3$

D. $x < 5$

63. Simplify the expression: $10x^0$

A. x

C. 0

B. $10x$

D. 1

64. Simplify the expression: $-3x^4y^{-2}^0$

A. 0

C. $\frac{x^4}{-3^2}$

B. 1

D. $-3x^4y^{-2}$

65. What is the solution to the inequality below?

$$x + 8 > -10$$

A. $x > -2$

B. $x > -18$

C. $x < -2$

D. $x < -18$

66. Which of the following sets of numbers are finite ?

A. $\{2, 4, 6, 8\}$

B. $\{\text{positive integers}\}$

C. $\{3, 4, 5, 6, \dots\}$

D. $\{\text{all real numbers between 1 and 2}\}$

67. Simplify the expression: $3x^2 + 6x - 1 + 5x^2 - 4x - 2$

A. $8x^2 - 2x - 1$

C. $8x^2 + 2x - 3$

B. $8x^2 + 10x - 3$

D. $8x^2 + 2x - 1$

68. Simplify the expression: $7x^2 - 3x + 9 - 2x^2 + 4x - 1$

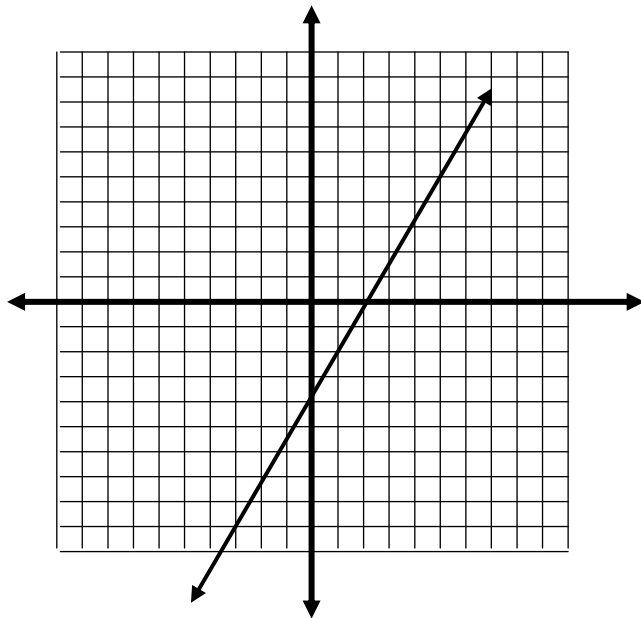
A. $5x^2 + x + 8$

C. $9x^2 + x + 8$

B. $9x^2 - 7x + 10$

D. $5x^2 - 7x + 10$

69. Choose the correct equation for the following graph.



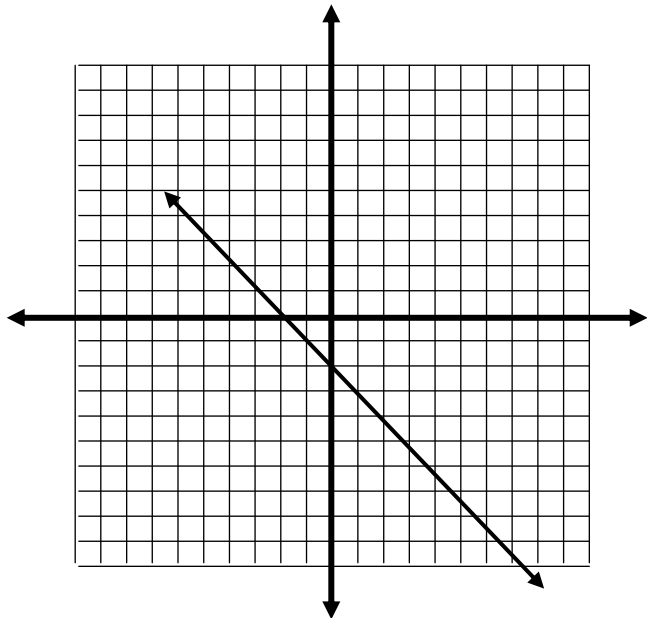
A. $y = 2x + 4$

B. $y = 2x - 4$

C. $y = 4x + 2$

D. $y = 4x - 2$

70. Choose the correct graph for the equation $14x - 7y = -21$



A. $y = x - 2$

B. $y = x + 2$

C. $y = -x - 2$

D. $y = -x + 2$

71. Solve for x .

$$\boxed{-2(2x+3) < 3x+8}$$

- A. $x > -2$ B. $x > -14$ C. $x < -2$ D. $x < 14$

72. Which relation is not a function ?

- A. $\{(0,1), (1,2), (2,3), (3,4)\}$
B. $\{(0,5), (1,5), (2,5), (3,5)\}$
C. $\{(1,3), (2,4), (1,5), (2,6)\}$
D. $\{(1,5), (2,6), (3,7), (4,8)\}$

73. Simplify the expression: $x+4 \quad x-8$

- A. $x^2 + 4x - 32$ C. $x^2 + 12x + 32$
B. $x^2 - 4x - 32$ D. $x^2 - 12x - 32$

74. Simplify the expression: $x-2 \quad x-5$

- A. $x^2 - 7x + 10$ C. $x^2 - 7x - 10$
B. $x^2 - 3x + 10$ D. $x^2 - 3x - 10$

75. Write the equation of the line passing through the points $(3, 0)$ and $(0, 6)$.

- A. $y = \frac{1}{2}x + 3$ B. $y = -\frac{1}{2}x + 3$
C. $y = 2x + 6$ D. $y = -2x + 6$

76. Write the equation of the line passing through the points $(2, 5)$ and $(4, 9)$.

- A. $y = 2x + 1$ B. $y = \frac{1}{2}x + 1$
C. $y = 2x + 5$ D. $y = \frac{1}{2}x + 9$

77. Solve the system of equations:
- $$y = -x + 8$$
- $$y = -2x + 10$$
- A. 2,6
B. -6,14
C. 6,2
D. 14,-6

78. Solve the system of equations:
- $$x = 4y - 4$$
- $$x = 4y + 6$$
- A. 0,0
B. 0,2
C. infinitely many solution
D. no solution

79. Which addition property is illustrated by the following statement?

$$6 + 7 = 7 + 6$$

- A. Distributive
B. Commutative
C. Inverse
D. Identity
80. Which addition property is illustrated by the following statement?

$$6(1) = 6$$

- A. Distributive
B. Identity
C. Inverse
D. Associative
81. Determine the slope of the line passing through (3, 6) and (4, 8).

- A. $m = \frac{1}{2}$
B. $m = -2$
C. $m = -\frac{1}{2}$
D. $m = 2$

82. Determine the slope of the line passing through (-2, -7) and (3, 8).

- A. $m = \frac{1}{3}$
B. $m = 5$
C. $m = 3$
D. $m = -5$

83. Which of the following is closest to the expression? $2\sqrt{45}$

A. 10

C. 18

B. 14

D. 90

84. Which two integers is the given square root between? $\sqrt{80}$

A. 7 and 8

C. 9 and 10

B. 8 and 9

D. 10 and 11

85. Which of the linear equations below is derived from the following table of values?

x	-2	0	2	4	6
y	-8	-4	0	4	8

A. $y = \frac{1}{2}x - 4$

B. $y = 2x - 4$

C. $y = x - 4$

D. $y = -2x + 8$

86. Which of the linear equations below is derived from the following table of values?

x	-3	-1	1	3	5
y	-2	4	10	16	22

A. $y = \frac{1}{3}x + 7$

B. $y = 3x + 7$

C. $y = x + 7$

D. $y = -2x - 1$

87. The given set belongs to which subset of the real numbers ?

$$\{2\sqrt{6}, \sqrt{29}, \sqrt{41}, \sqrt{73}\}$$

A. Whole numbers

B. Integers

C. Natural numbers

D. Irrational numbers

88. A submarine is 325 feet under the surface of the ocean. A helicopter is flying at 3,500 feet above sea level. Given that the helicopter is directly above the submarine, how far apart are they?
- A. 325 feet
B. 3,175 feet
C. 3,825 feet
D. 3,500 feet
89. Solve for x: $\sqrt{x} + 20 = 25$
- A. $\sqrt{5}$
B. 20
C. 25
D. 5
90. Solve for x: $\sqrt{x} - 7 = 11$
- A. $\sqrt{18}$
B. 324
C. 2
D. 4
91. Solve for x: $\sqrt{x+3} + 5 = 7$
- A. 2
B. 1
C. -1
D. 4
92. Solve for x: $\sqrt{x-3} + 1 = 6$
- A. 64
B. 28
C. 22
D. 5
93. The "-3" in the equation $y = 4x - 3$ is changed to a "5". How will the new graph compare to the graph of the original equation?
- A. The new graph will be perpendicular to the original graph.
B. The graph will be unchanged.
C. The new graph will be parallel to the original graph.
D. The new graph will intersect the original graph but they will not be perpendicular.
94. What is the equation of the line that has a slope of -5 and passes through (6,1)?
- A. $y = -5x - 1$
B. $y = -5x + 31$
C. $y = 6x - 5$
D. $y = x - 6$

95. What is the equation of the line that has a slope of 0 and passes through $(-2, 8)$?

A. $y = -2x + 8$

B. $x = -2$

C. $y = 8$

D. $y = 8x - 2$

96. What is the value of the expression when $x = 4$ and $y = -2$?

$$|5x| - |3y|$$

A. -2

B. 26

C. 22

D. 14

97. What is the solution of the equation ?

$$x + |-5| = 10$$

A. $x = 5$

B. $x = 15$

C. $x = 10$

D. $x = 20$

98. What is the value of the expression, $\sqrt{y} - 5x$, when $x = 2$ and $y = 16$?

A. 6

C. -6

B. -2

D. 12

99. What is the solution to the equation below?

$$3x + 9 = 4 - 2x$$

A. $x = -1$

B. $x = -5$

C. $x = -\frac{13}{5}$

D. $x = 5$

100. What is the solution to the equation below?

$$6x + 7 = 3x + 16$$

A. $x = -3$

B. $x = \frac{2}{3}$

C. $x = -\frac{23}{3}$

D. $x = 3$

8th Grade EOC
Study Guide Answer Key

Question #	Answer	Question #	Answer	Question #	Answer	Question #	Answer
1	C	26	B	51	A	76	A
2	B	27	A	52	B	77	A
3	B	28	A	53	C	78	D
4	C	29	B	54	A	79	B
5	D	30	C	55	B	80	B
6	A	31	B	56	B	81	D
7	A	32	A	57	B	82	C
8	B	33	A	58	A	83	B
9	A	34	C	59	D	84	C
10	C	35	C	60	B	85	B
11	B	36	C	61	B	86	B
12	D	37	C	62	A	87	D
13	A	38	A	63	D	88	C
14	A	39	D	64	B	89	C
15	A	40	A	65	B	90	B
16	C	41	A	66	A	91	B
17	C	42	A	67	C	92	B
18	D	43	D	68	B	93	C
19	D	44	B	69	B	94	B
20	A	45	C	70	C	95	C
21	B	46	A	71	A	96	D
22	C	47	A	72	C	97	A
23	C	48	C	73	B	98	C
24	B	49	A	74	A	99	A
25	C	50	C	75	D	100	D