

Name: _____ Date: _____ Period: _____

Midterm Review Possible Test Questions

Unit 1

- Simplify the expression $10.7 - 11.2$
 - 1.5
 - 0.5
 - 21.9
 - 1.5
- Simplify the expression $2k + 5k$
 - $7k$
 - $7k^2$
 - $10k$
 - $10k^2$
- Simplify the expression $4(-7n - 3) + 2$
 - $-28n + 10$
 - $-28n - 10$
 - $-28n + 14$
 - $28n - 14$
- Simplify the expression $\frac{1}{12} \div \frac{6}{5}$
 - $\frac{7}{17}$
 - $\frac{1}{10}$
 - $-\frac{5}{7}$
 - $\frac{5}{72}$
- Write *the sum of x squared and 15 is less than 25* as an algebraic expression
 - $x^2 + 15 - 25$
 - $x^2 + 15 < 25$
 - $(2x) \times 25 < 25$
 - $25 < x^2 + 15$
- Write *half of a number, decreased by 10* as an algebraic expression
 - $n - \frac{1}{2} - 10$
 - $\frac{n}{2} - 10$
 - $2n + 10$
 - $\frac{1}{2}(n - 10)$
- James has \$75 for lunch this week. He spends \$5.99 on his first meal. Pick the best equation to represent how much money he has left over.
 - $x + 75 = 5.99$
 - $x + 5.99 = 75$
 - $5.99 - 75 = x$
 - $5.99 + 75 = x$

Unit 1 Solving

Solve the following equations. If there is no solution, write *no solution*. If the answer is all real number, write *all real numbers*.

8. $22 = -11k$

9. $-10 = x + 20$

10. $-2 = 2 + \frac{v}{4}$

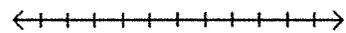
11. $8 + \frac{b}{-4} = 5$

12. $2(n + 5) = -2$

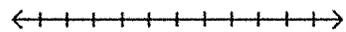
13. $2(4x - 3) - 8 = 4 + 2x$

Solve and Graph the following Inequalities.

14. $-2x < 10$



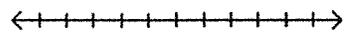
15. $\frac{x-4}{6} < 10$



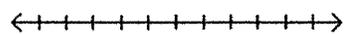
16. $2x - 3 \geq 3x + 5$



17. $3 < x - 2 \leq 10$



18. $5 \leq \frac{x-2}{2}$ or $-2x > 10$



Write the inequality for the following graphs.

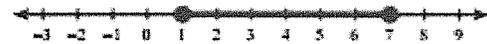
19.



20.



21.



22.



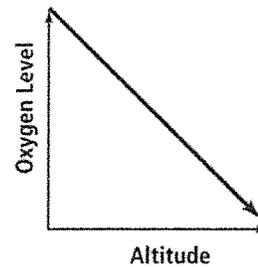
23. A student had \$45 when she went to the mall. She spent \$9 on a pair of earrings. Then she wants to buy some CDs that cost \$12 each. Write and solve an inequality to determine how many CDs she can buy.

Slope Domain and Range

24. Fill in the following Table

x-value	y-value
input	
domain	
	Up & down
independent	

25. Pick the best answer choice to describe the relation



- A. As the altitude increases, the oxygen level increases
- B. As the altitude increases, the oxygen level decreases
- C. As the altitude decreases, the oxygen level decreases

26. Consider the relation $\{(4, 10), (5, 17), (7, 31), (14, 10)\}$.

- a. What is the domain the of the relation?
- b. What is the range of the relation?
- c. Is the relation a function? Explain.

27. Consider the relation $\{(-2, 5), (0, 10), (0, 15), (2, 20)\}$.

a. What is the domain the of the relation?

b. What is the range of the relation?

c. Is the relation a function? Explain.

28. The domain of $t(x) = 2x + 10$ is $\{-2, -1, 0, 5, 10\}$. Pick the answer choice that represents the range?

- A. $\{-2, -1, 0, 5, 10\}$
- B. $\{-1, 10\}$
- C. $\{-4, -2, 0, 10, 20\}$
- D. $\{6, 8, 10, 20, 30\}$

29. The range of $t(x) = 3x - 1$ is $\{-4, 2, 8\}$. Pick the answer choice that represents the domain?

- A. $\{-2, 0, 5\}$
- B. $\{2, 4, 6\}$
- C. $\{-4, 2, 8\}$
- D. $\{-22, -4, 14\}$

30. Using the function

$$f(x) = 2x - 4.$$

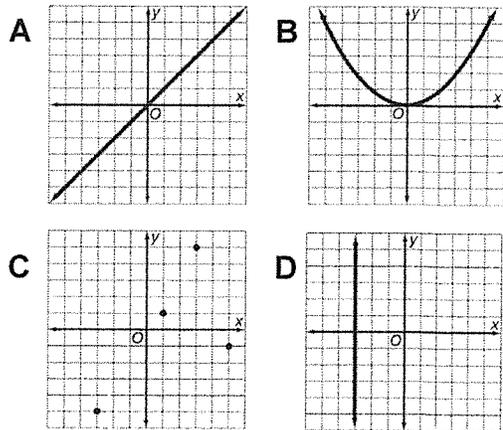
Evaluate $f(-2)$.

31. Using the function

$$h(x) = -4x + 10.$$

Find x when $h(x) = -10$

32. Which of the following is NOT a function?



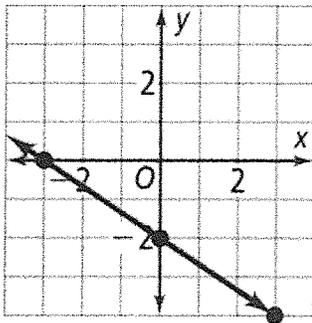
33. Jane's job earns her \$9.25 an hour. Pick the function rule that represents the number of hours she works h to the total earnings t .

- A. $t = 9.25h$
- B. $t = h + 9.25$
- C. $h = 9.25t$
- D. $h = t + 9.25$

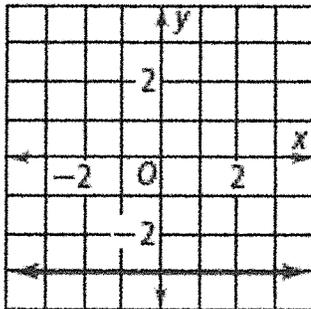
Unit 2 Graphing and Slope

34. Find the slope between the points $(-3, -2)$ and $(5, 4)$

35. What is the slope of the line?



36. What is the slope of the line?



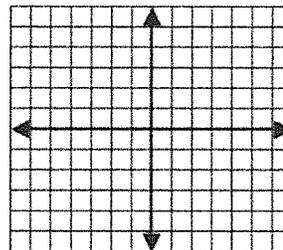
- A 0
- B undefined
- C -3
- D 1

37. Which linear function rule models the table below?

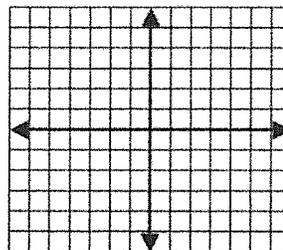
x	y
0	4
4	6
8	8
12	10

- A $y = 2x - 4$
- B $y = \frac{1}{2}x$
- C $y = 8$
- D $y = \frac{1}{2}x + 4$

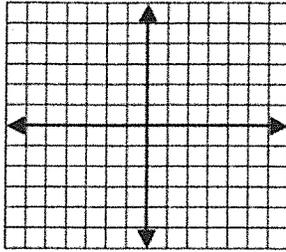
38. $y = \frac{2}{3}x + 2$



39. $x = -3$



40. $x = -3$



41. What is the equation of the line that has a y-intercept of 4 and a slope of -5 ?

- F** $y = 4x - 5$
- G** $y = -4x + 5$
- H** $y = -5x + 4$
- J** $y = 5x - 4$

42. A line passes through $(-2, -3)$ and has a slope of $-\frac{3}{4}$. Which is an equation of the line?

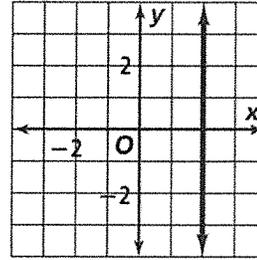
- F** $y - 3 = -\frac{3}{4}(x - 2)$
- G** $y + 3 = -\frac{3}{4}(x - 2)$
- H** $y - 3 = -\frac{3}{4}(x + 2)$
- J** $y + 3 = -\frac{3}{4}(x + 2)$

43. What is the type of rate of change?

$$y = \frac{5}{17}x - 12$$

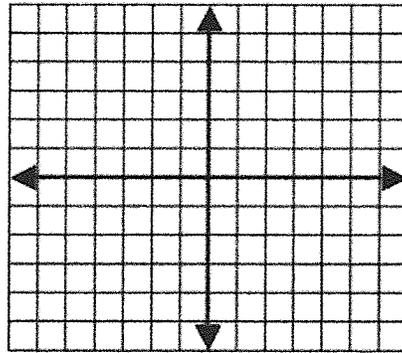
- A** undefined
- B** positive
- C** negative
- D** 0

44. Which equation represents the graph below?

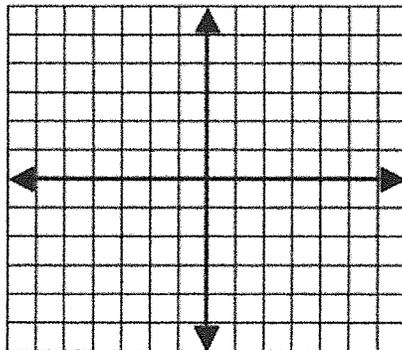


- F** $x = 2y$
- G** $x = 2$
- H** $y = 2x$
- J** $y = 2$

45. $y \geq 2x + 1$



46. $3x - 2y < 6$



Identify the slope of each line. Then determine if the following lines are **Parallel**, **Perpendicular**, or **Neither**.

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

48. $y = 0$ & $x = 3$

49. $y = \frac{1}{2}$ & $y = -2$

50. $y = 2x + 3$ & $y = -\frac{4}{3}$

51. What is the equation of the line that is perpendicular to $2y = -x - 8$ and passes through the point $(2, -3)$?

F $y = 2x + 1$

G $y = -\frac{1}{2}x - 2$

H $y = -\frac{1}{2}x - 1$

J $y = 2x - 7$

Unit 2 Systems of Equations

52. What is the solution to the following system?

x	y
-2	-10
-1	-7
0	-4
1	-1
2	2
3	5

x	y
-2	4
0	3
2	2
4	1
6	0
8	-1

Solve using Substitution. If there is no solution, write no solution. If there is infinitely many solutions, write infinitely many solutions.

53. $y = 3x$
 $-3x - y = -24$

54. $-2x + 6y = 6$
 $-7x + 8y = -5$

Solve the following Systems using Elimination. If there is no solution, write no solution. If there is infinitely many solutions, write infinitely many solutions.

55. $-6x + 6y = 6$
 $6x - 3y = 12$

56. $-4x - 15y = -17$
 $-x + 5y = -13$

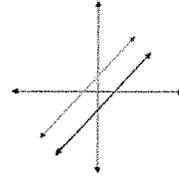
57. Is $(-2, -4)$ a solution to the system below?

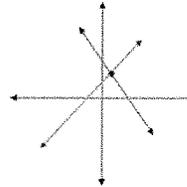
$$\begin{cases} 3x - 2y = 2 \\ 5x - 5y = 10 \end{cases}$$

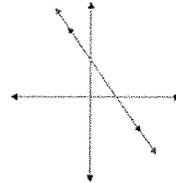
58. Student tickets to the school football game cost \$5.80 each and general admission tickets cost \$7.40 each. The school sells 380 tickets for a total of \$2372. Which system of equations models this situation?

- F $\begin{cases} x + y = 2372 \\ 5.8x + 7.4y = 380 \end{cases}$
- G $\begin{cases} x + y = 380 \\ 5.8x + 7.4y = 2372 \end{cases}$
- H $\begin{cases} x + 7.4y = 2372 \\ 5.8x + y = 380 \end{cases}$
- J $\begin{cases} 5.8x + y = 2372 \\ x + 7.4y = 380 \end{cases}$

59 Determine the number of solutions for each system of equations.







60. Is $(-2, -4)$ a solution to the system below?

$$\begin{cases} 3x - 2y = 2 \\ 5x - 5y = 10 \end{cases}$$

61. Solve the following system by graphing.

$$\begin{cases} y = -x + 4 \\ y = 3x \end{cases}$$

