

Name:

Foundations Semester 1 Study Guide



UNIT 1

Objective: Classify number sets

1. Check all the names that apply for the number.

	Natural	Whole	Integer	Rational	Irrational
-5					
$\sqrt{11}$					
$\frac{3}{4}$					

Objective: Use order of operations to simplify expressions

2. $6 \times 2 + 10 \div 5$

3. $[-4 + (6 - 3)^2] + 5$

Objective: Solve linear equations.

Solve the equation for the given variable. Check your answer! 😊

4. $-3x + 4 = -70$

5. $-4 = 6 + \frac{x}{2}$

6. $3x - 2 = 3x + 6$

7. $-5(3x + 3) = -3x + 4x - 2$

Objective: Solve proportions

Solve the proportion for the given variable.

8. $\frac{4}{7} = \frac{x}{13}$

9. $\frac{x+1}{2} = \frac{3}{10}$

Objective: Solve equations involving percentages.

10. What number is 74% of 198?

11. 27 is what percent of 60?

12. The cookie monster goes to the store to buy some chocolate chip cookies. One cookie normally costs him \$5.30. The cookies are 20% off. How much does he pay for the discounted cookie?



Objective: Solve literal equations.

Solve for y in terms of x .

13. $4x - 3y = 21$

14. $-4 = -2x + y$

Unit 1 Self-Reflect:

On a scale of 1 - 5, (1 = Yikes! I need to study more!.. 5 = I am going to ACE this test!) how do you feel about Unit 1?

1

2

3

4

5

Why?! Explain ☺

UNIT 2



Objective: Solve absolute value equations.

Solve for x and check your answer.

15. $|4x| = 48$

16. $|x - 5| - 2 = 21$

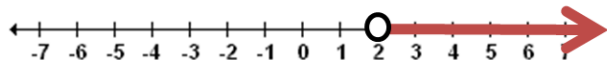
17. $|20 - 3k| = -40$

18. $2|4 - 3x| + 6 = 10$

Objective: Given a graph, write the solution in both inequality notation and interval notation.

Express the solution to the inequality in both inequality notation and interval notation.

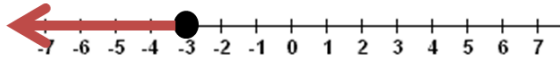
19.



Inequality Notation: _____

Interval Notation: _____

20.



Inequality Notation: _____

Interval Notation: _____

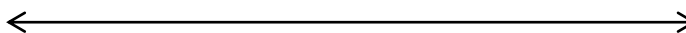
Objective: Given an inequality, graph it on the number line.

Graph the inequality.

21. $x \leq -2$



22. $8 > x$

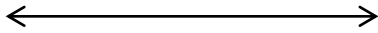


Objective: Solve and Graph Linear Inequalities

Solve, graph, and give the solution in both inequality and interval notation.

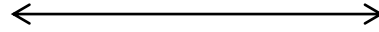
23. $-12 \leq 3r - 6$

24) $-4(2 - 4n) > 72 + 16n$



Inequality Notation: _____

Interval Notation: _____

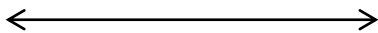


Inequality Notation: _____

Interval Notation: _____

25. $5x + 2 + 5x < 22$

26) $28 + 5x \geq 5(x - 3)$



Inequality Notation: _____

Interval Notation: _____

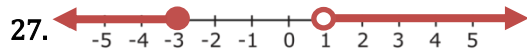


Inequality Notation: _____

Interval Notation: _____

Objective: Given a graph, write the solution in both inequality notation and interval notation.

Express the solution to the inequality in both inequality notation and interval notation.



Inequality Notation: _____

Interval Notation: _____



Inequality Notation: _____

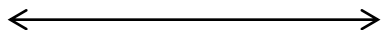
Interval Notation: _____

Objective: Solve and Graph Compound Inequalities

Solve, graph, and give the solution in both inequality and interval notation.

29) $3x \leq -15$ and $-10 + x < -4$

30) $-3x \geq 9$ OR $7x - 6 \geq 8$



Inequality Notation: _____

Interval Notation: _____



Inequality Notation: _____

Interval Notation: _____

Unit 2 Self-Reflect:

On a scale of 1 - 5, (1 = Yikes! I need to study more!.. 5 = I am going to ACE this test!) how do you feel about Unit 2?

1

2

3

4

5

Why?! Explain ☺

UNIT 3

Objective: Use functions to find inputs and outputs.

Use the functions below to answer the questions.

$f(x) = 10x - 14$, $m(x) = x^2 + 4x$, and $j(x) = |4 - x|$

31. $f(-2) =$

32. $j(9) =$

33. $m(-4) =$

34. Find x when $f(x) = -4$

Objective: Use a table, to answer questions about inputs/outputs of functions.

Use the table below to evaluate the following:

x	$f(x)$	$g(x)$	$h(x)$
-4	15	-3	5
-3	10	-1	3
-2	7	-3	1
6	-3	-5	-1

35. $f(6) =$

36. $g(-3) =$

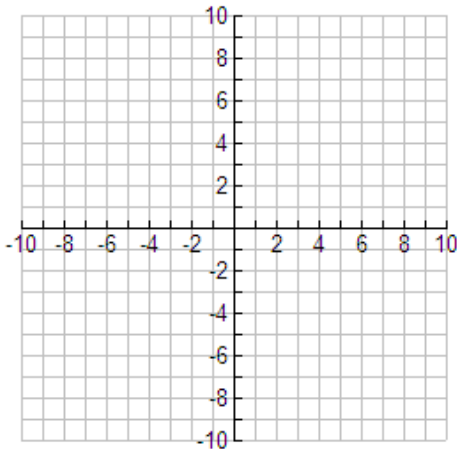
37. Find x when $g(x) = -3$

Objective: Graph a function given a verbal expression.

38. $f(x)$: triple the input and then subtract 4

Function: $f(x) =$

x	$f(x)$
-2	
-1	
0	
1	
2	



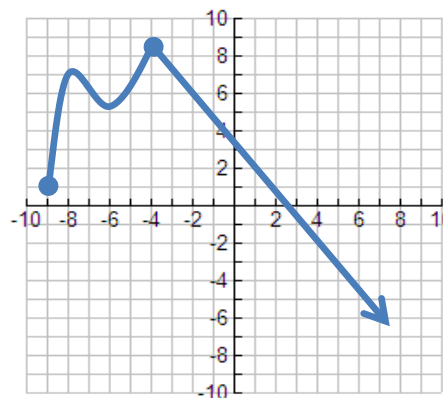
Objective: Use a graph to evaluate a function.

39. $f(5) =$ _____

40. $f(-9) =$ _____

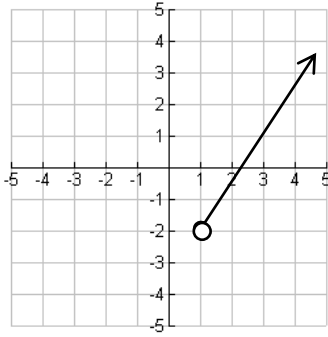
41. Find x when $f(x) = 1$

$x =$ _____



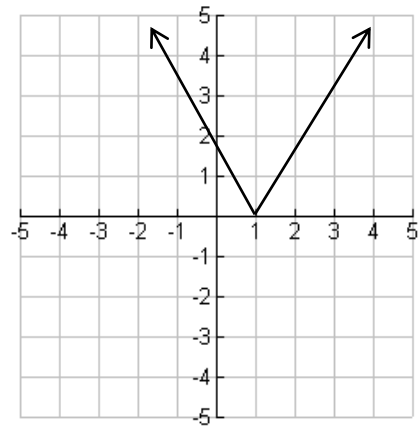
Objective: Find the domain, range, and end behavior given a graph.

42.



Domain : _____
 Range: _____
 Function: YES or NO

43.



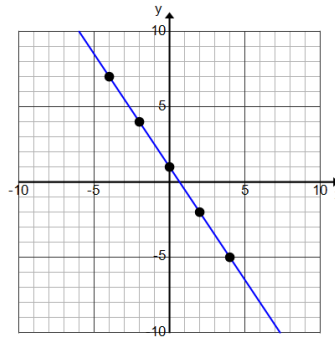
Domain : _____ As $x \rightarrow -\infty, y \rightarrow$ _____
 Range: _____ As $x \rightarrow \infty, y \rightarrow$ _____
 Function: YES or NO

Objective: Calculate slope use coordinate points and a graph.

44. (2, -6) and (-4, -9)

45. (1, 4) and (10, -3)

46.



Slope (m) = _____

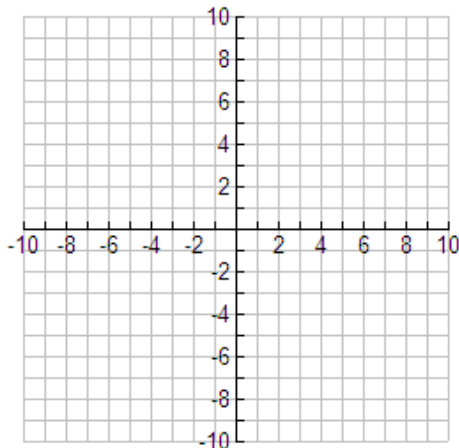
Objective: Determine if a point is a solution to the equation.

47. Is the ordered pair (-1, -4) a solution to the equation $2y - 3x = -13$

Objective: Given an equation, solve for x, create a table, and graph.

48. $y - 2x = -3$

x	f(x)
-2	
-1	
0	
1	
2	



Unit 3 Self-Reflect:

On a scale of 1-5, how do you feel about Unit 3?

1 2 3 4 5

Yikes

AMAZING!