Unit 1 Midterm Review

After you complete each concept → give yourself a rating → ☺ 😐 ☹
This will remind you which concepts you need to revisit before the midterm.

Order of Operations: ☺ 😐 ☹

1. $10-5\div5\times2$

2. $[(10-15)^2+3]\div2$

Number Sets & Closure ☺ 😐 ☹

3. Classify the following Numbers (Counting (natural), Whole, Integers, Rational, Irrational)

   a. -5

   b. $\frac{3}{4}$

   b. $\sqrt{3}$

4. Are Whole numbers *closed* under subtraction? If no, provide a counter-example.

5. Are negative integers *closed* under multiplication? If no, provide a counter-example.

Solving Equations: ☺ 😐 ☹

6. $5 - 3x = - 19$

7. $3p + 7 - 6p = 21 - 3p$

8. $\frac{4}{3}(3x-12) = -(x+1)$

Solving Proportions: ☺ 😐 ☹

9. $\frac{9}{2} = \frac{m}{12}$

10. $-\frac{3}{4} = \frac{x}{2x-5}$

Solving Percent Problems: ☺ 😐 ☹

11. What is 15% of 30?

12. 80 is 30% of what number?

Solving Literal Equations: ☺ 😐 ☹

13. Solve for y in terms of x:

$-2x - 4y = 16$

14. Solve for a in terms of b and c:

$\frac{3a+6b}{9} = c$

Unit 2 Midterm Review

Solve Absolute Value Equations: ☺ 😐 ☹

1. $|5-9x|-5=9$

2. $|6-3x|-7=-9$

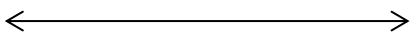
3. $-3|2-9x|+5=-70$

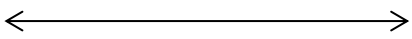
Solve Linear Inequalities, Express Solutions in Interval Notation, and Graph: ☺ 😐 ☹

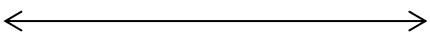
4. $-x+3(1-4x)\le -75$

5. $-9<\frac{1}{4}(6-3r)$

6. $-\frac{1}{2}(6-4p)>2p-8$







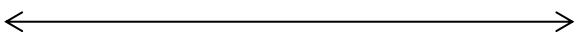
Interval notation:

Interval notation:

Interval notation:

Solve Compound Inequalities (Inequality & interval notation) then graph: ☺ 😐 ☹

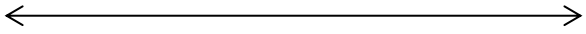
7. $5n > 10$ or $3n \leq -6$



Inequality Notation

Interval notation:

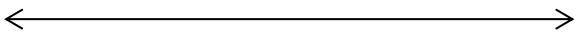
8. $-79 < 7k - 9 \leq 12$



Inequality notation

Interval notation:

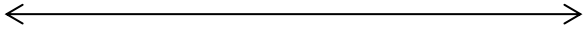
9. $8a - 2 \leq 54$ or $a - 2 < -6$



Inequality Notation

Interval notation:

10. $4m + 10 > 54$ and $-11m \geq 77$



Inequality notation

Interval notation:

Unit 3 Midterm Review

Definition of a Function: ☺ 😐 ☹

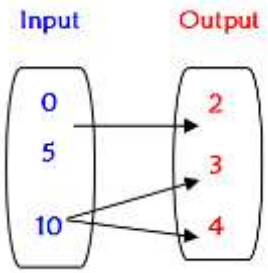
1. What is the definition of a function?

2. Which of the following are functions?

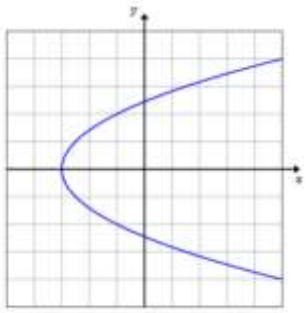
a.

Input	Output
1	4
2	8
3	12
4	12

b.



c.



Evaluating a Function from an Equation: ☺ 😐 ☹

3. $f(x) = -2x - 5$ *when* $x = -3$

4. $f(x) = -4x + 6$ *when* $f(x) = -6$

5. $f(x) = -3x^2 + 2$ *when* $x = -4$

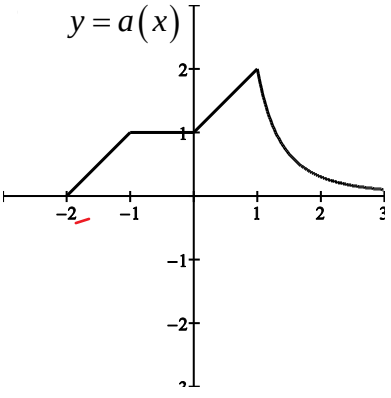
6. $f(x) = |2x - 5|$ *when* $f(x) = 9$

Evaluating a function graphically: ☺ 😐 ☹

7. a(-2) =

8. a(0) =

9. Find x when a(x) = 2



Quick Mental Check: 

- slope formula: _____
- slope intercept form : _____
- point – slope form: _____
- The slope of a vertical line is _____
- The slope of a horizontal line is _____
- To find a y intercept you : _____
- To find an x intercept you : _____

Find the slope between two points: ☺ 😐 ☹

10. (6, -9) and (8, -1)

11. (7, -5) and (7, -8)

12. Given the two points (4, y) and (7,-1), find the missing coordinate if the slope = 3.

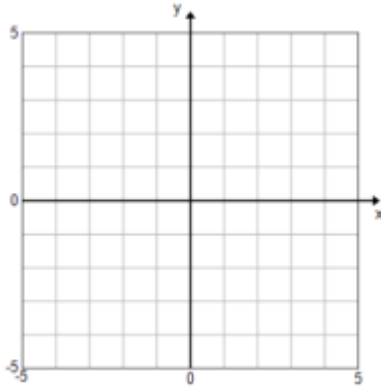
Find the x and y intercepts of an equation: ☺ 😐 ☹

13. $5x-3y=75$

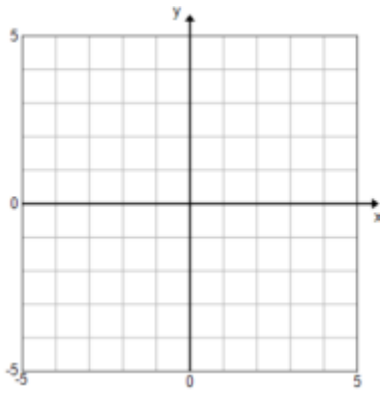
14. $y=\frac{1}{4}x-12$

Graph a vertical or horizontal line: ☺ 😐 ☹

15. Graph: $y = -1$

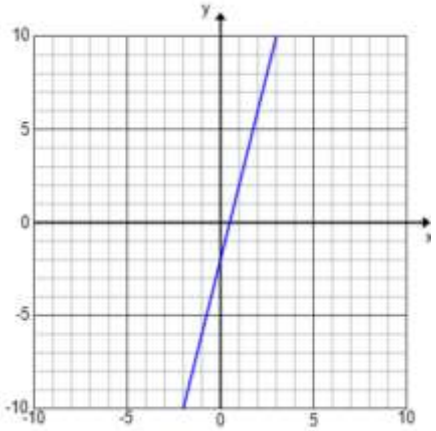


16. Graph: $-4x = -12$



Identify the slope and y intercept from a graph or equation: ☺ 😐 ☹

16)



17) $-4x - y = 20$

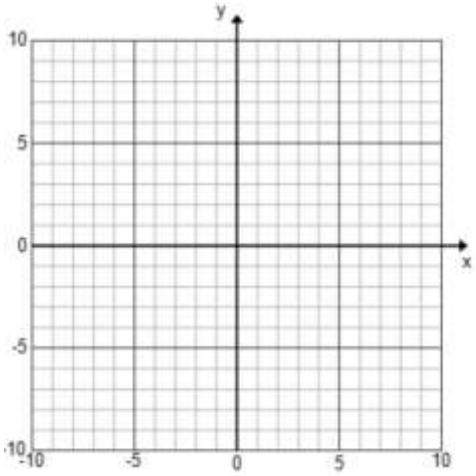
18) $x = 7$

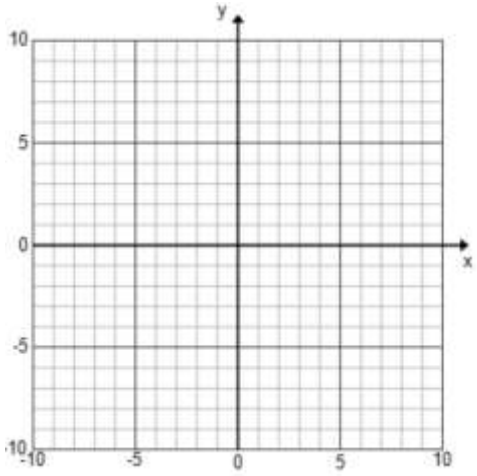
Graph from slope-intercept form or point-slope form: ☺ 😐 ☹

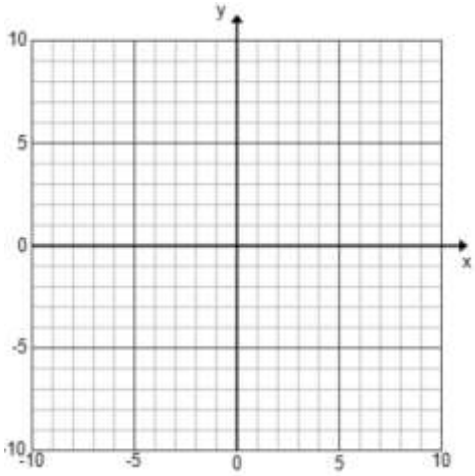
19) $y = 4 - 3x$

20) $8x + 8y = 16$

21) $y - 2 = -\frac{2}{3}(x + 4)$

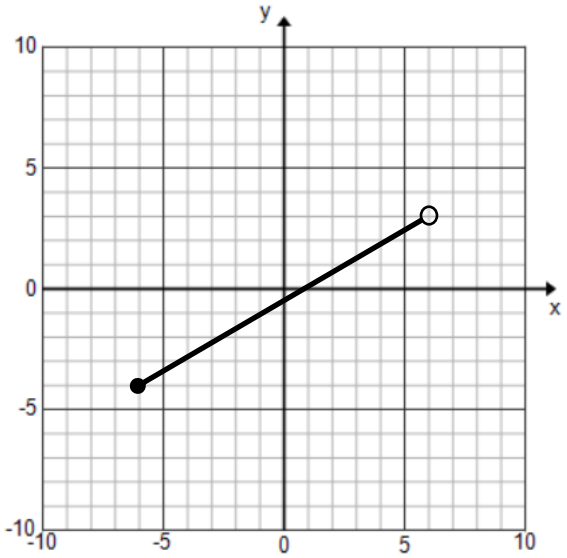






Recognizing Domain and Range Graphically: ☺ 😐 ☹

22. State the Domain and Range of the given graph:



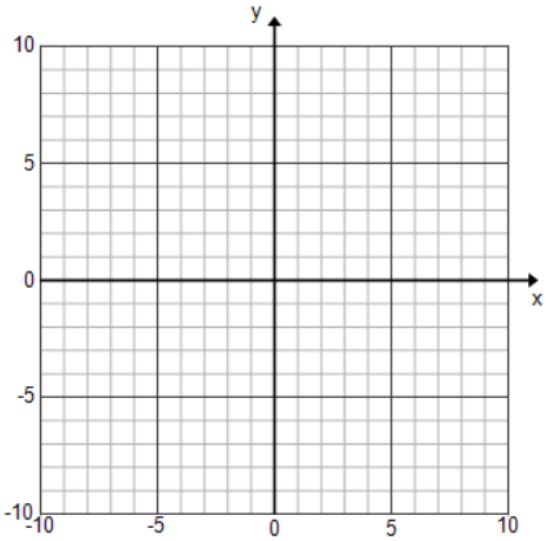
Inequality: **Interval:**

Domain: _____ _____

Range: _____ _____

23. Graph: $y = -\frac{2}{3}x + 6$ *with domain*: $x < 3$

Then state the resulting range:

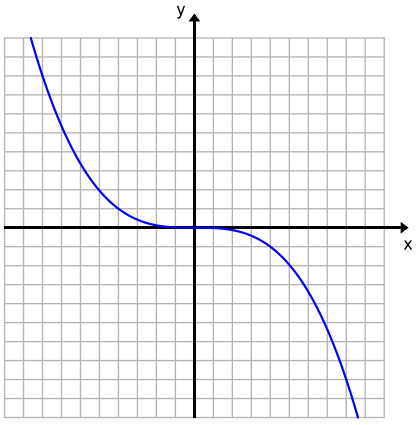


Range: _____

_____

Recognizing End Behavior from a graph: ☺ 😐 ☹

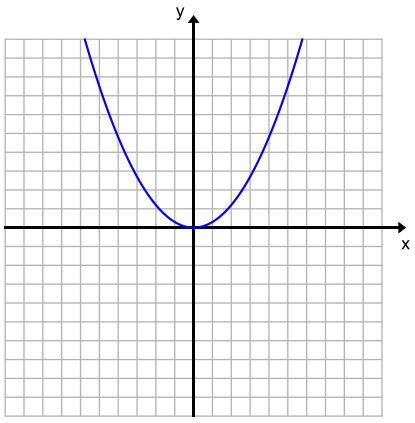
24.



As x → _____ , → _____ .

As x → _____ , → _____ .

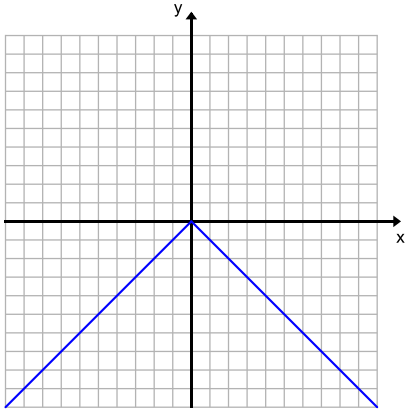
25.



As x → _____ , → _____ .

As x → _____ , → _____ .

26.



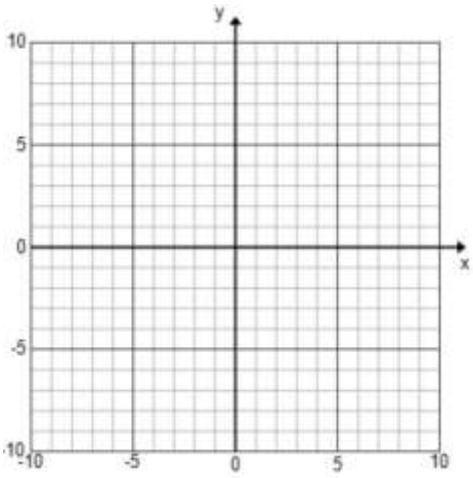
As x → _____ , → _____ .

As x → _____ , → _____ .

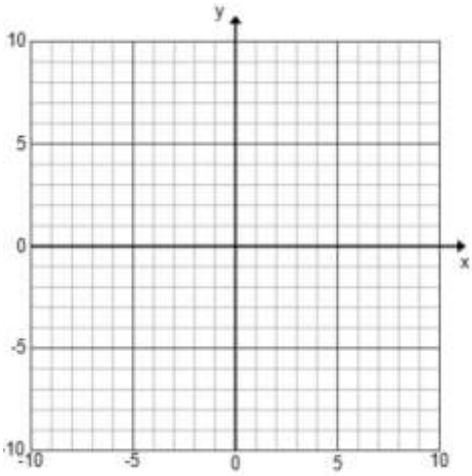
Absolute Value Graphs and Graph Transformations: ☺ 😐 ☹

(#27-29) Graph the absolute value function using transformations.

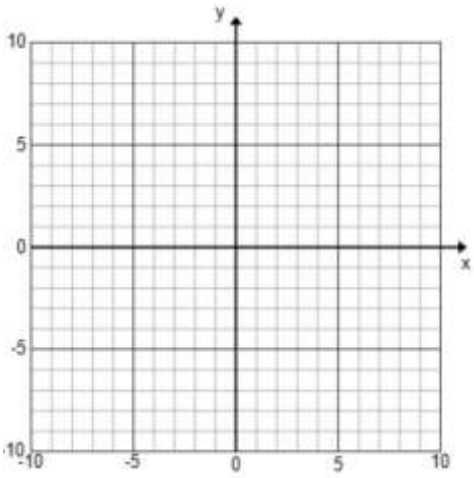
27. $y = -|x|$



28. $y = |x-2|+5$



29. $y = -|x+6|$



(#27-29) Write an equation to represent the graph described.

27. The absolute value graph is reflected over the x-axis and shifted four units to the left.

28. The absolute value graph is shifted 3 units to the right and 1 unit down.

29. The absolute value graph is reflected over the y-axis and shifted 6 units up.

Steps for Getting Ready for the Midterm:

1. First – have you graded and corrected your study guide???

2 . Go back through you packet and pick the top 3 concepts you had the most trouble with:

1. _____
2. _____
3. _____

3. Now go back through your notes, the website, and your quizzes and find similar problems to try.

4. Consider "retaking" old quizzes (or at least problems that you may have missed the first time)

5. Still Stuck? Call a friend, open your textbook, visit the website, and ASK YOUR TEACHER!