Name: _____

2017 –2018 Mathematics Teacher: _____

Summer Review for incoming <u>Algebra II General</u> students

Please complete this review packet for the
FIRST DAY OF CLASS.

The problems included in this packet will provide you with the opportunity to practice the mathematical skills you have learned throughout the current school year and will help you to be prepared for the concepts you will learn in Algebra II next school year. You are responsible for ALL the concepts covered in the packet. If you do not remember how to complete a problem, look it up in your notes or online. If you should misplace this packet, you can find a copy posted on the district website:

http://nbhs.northbranfordschools.org/

A **<u>quiz</u>** will be given on the material within the first week of classes.

You will receive a <u>double homework grade</u> (worth 2 homework assignments) on this packet based on the following criteria:

- All problems are completed
- All work is shown
- Work is received on the first day of class

1. Solve each equation:

a. $2x+6=7x-4$

b. $8-(6+2x)=100$

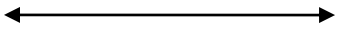
2. Solve each equation for the given variable:

a. $2x + 7y = 9$, for y

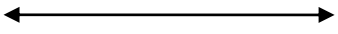
b. $2b+2h=p$, for b

3. Graph the following inequalities using the lines provided then write the inequality using interval notation below the line:

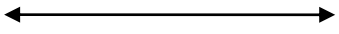
a. $x>2$



b. $x<-2$ *or* $x\geq 1$



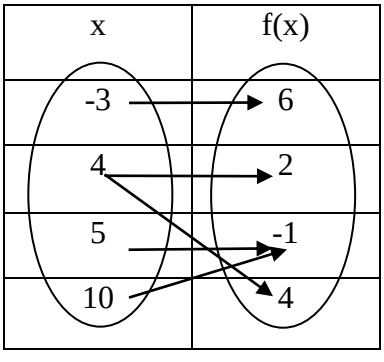
c. $-3\leq x<4$



Determine whether each relation is a function. If it is not a function explain why not.

4. $\{(-3,1),(2,1),(0,0),(4,0)\}$

5.



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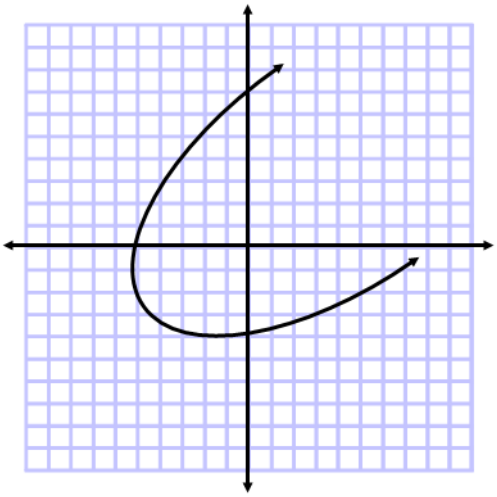
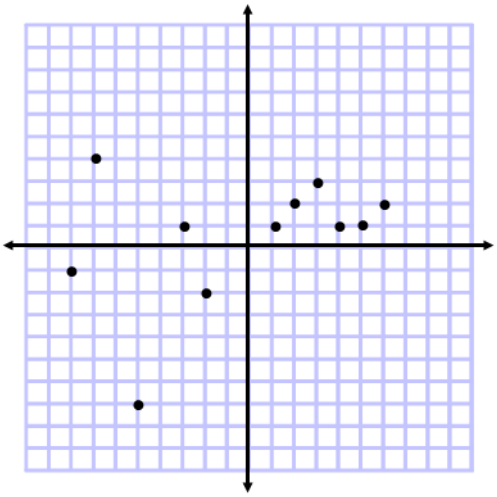


7.



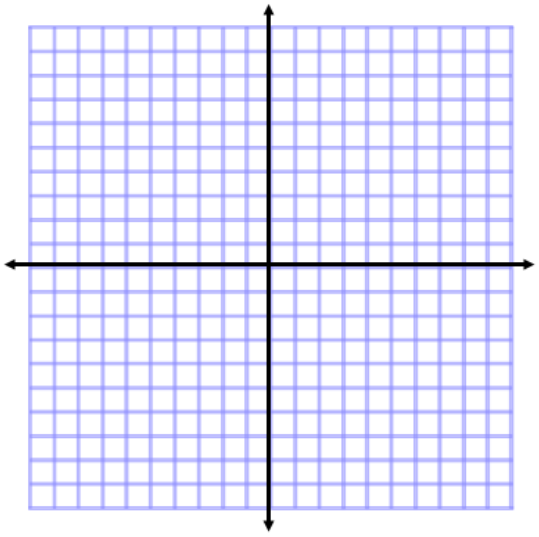
8. Evaluate each function for $x = -3$.

a. $f(x) = 3x^2 - 5$

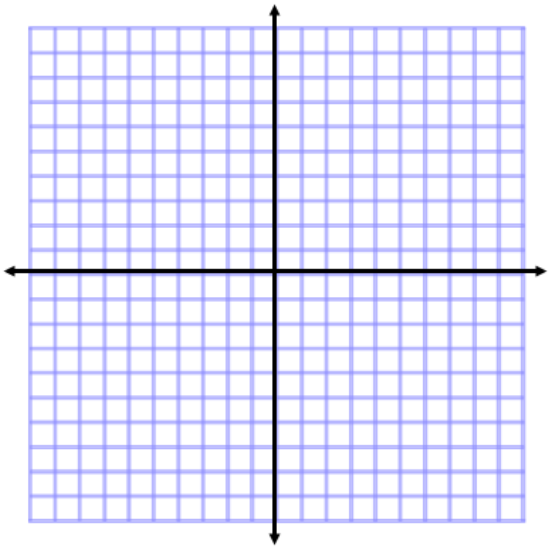
b. $g(x) = -x + 16$

9. Graph each function.

a. $f(x) = -x + 4$



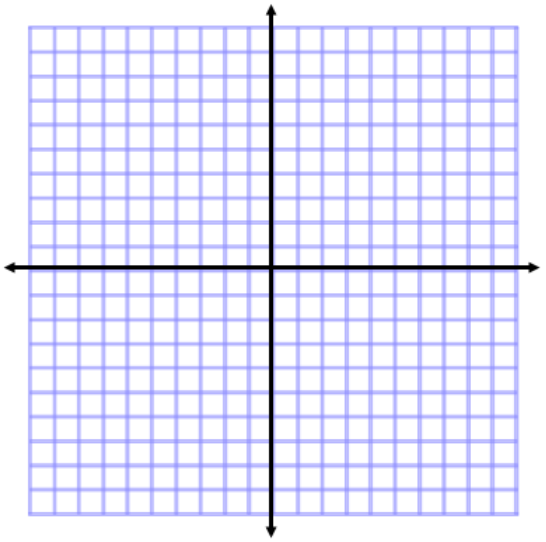
b. $g(x) = 2x - 3$



Complete the table and graph the function. The first coordinate of problem #10 has been done for you as an example.

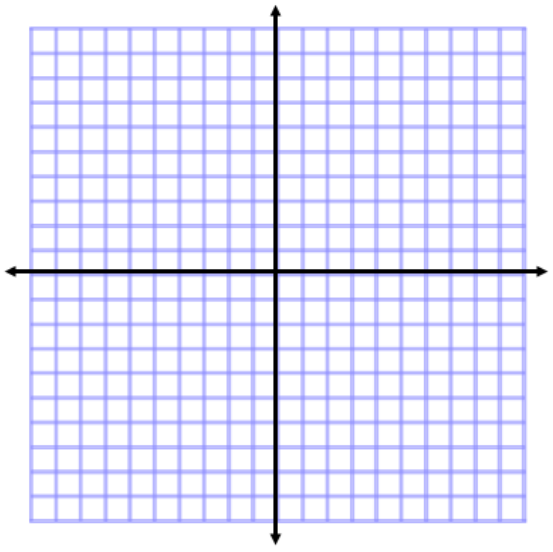
10. $f(x) = x^2 + 3$

x	f(x)	(x, f(x))
-2	$(-2)^2 + 3 = 4 + 3 = 7$	(-2, 7)



11. $f(x) = |x| - 1$

x	f(x)	(x, f(x))



12. Simplify by combining like terms.

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

Multiply.

13. $(x+4)(x^2-5x+6)$

14. $(x-3)(x+3)$

15. $(x+7)^2$

Simplify. Leave answers in fraction form.

16. $\left(\frac{8}{3}\right)\div\left(\frac{2}{5}\right)$

17. $\left(\frac{2}{3}\right)\cdot\left(\frac{5}{4}\right)$

Factor each polynomial. Remember to first look for a GCF.

18. $x^2+20x+36$

19. $2x^2-2x-60$

20. $2x^3 + 8x^2 + 5x + 20$

21. $x^2 - 81$

22. $25x^2 - 144$

23. $x^2 + 4x - 12$

24. Solve each equation using the zero-factor property.

a) $x^2 + 2x - 15 = 0$

b) $4x^2 + 12x = 0$

25. Solve each equation using the quadratic formula.

a) $x^2 + 2x + 12 = 0$

b) $2x^2 - 4x = 15$