SM2 A5.3 Simple Factoring Name:_____ Period:_____

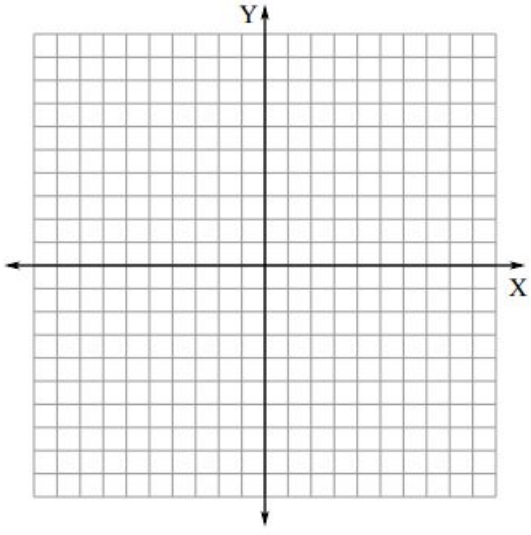
Directions: ***Factor the following quadratic functions.***

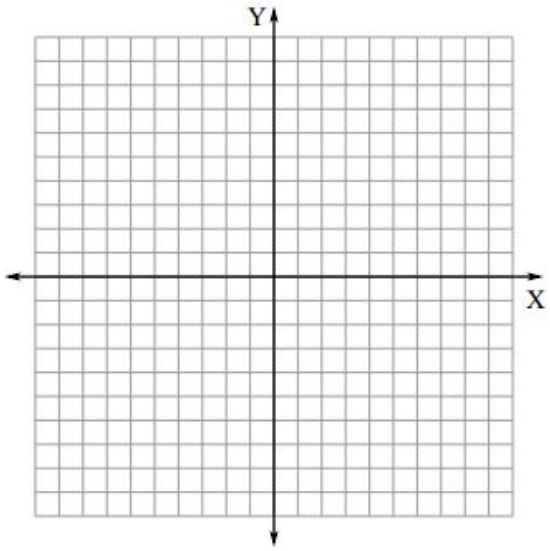
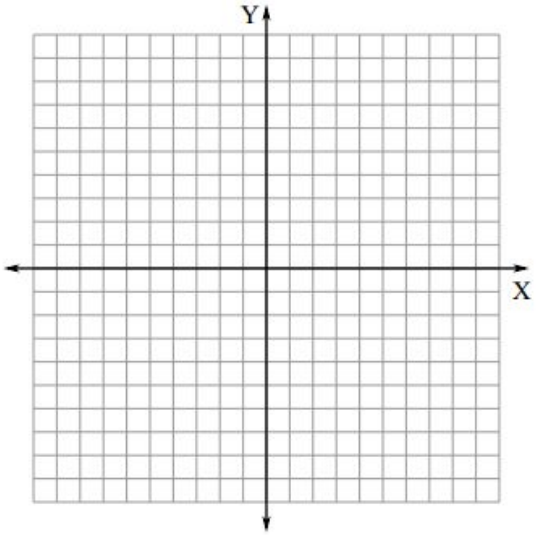
1. $x^2 - 4x - 12$	2. $x^2 + 12x + 32$
3. $x^2 + 7x + 10$	4. $x^2 - 49$
5. $x^2 + 6x + 9$	6. $x^2 - x - 12$

Directions: Find the ***SOLUTIONS to the equations by Factoring.***

7. $0 = x^2 + 10x + 24$	8. $0 = x^2 + x - 30$

Directions: ***Factor the quadratic function to find the x-intercepts. Then, find the y-intercept of the quadratic function. Use all the x-intercepts and the y-intercept each function.***

9. $y = x^2 + 6x + 8$ Factors: x-intercepts: (,) and (,) y-intercept: (,) (Hint: let $x = 0$) Coefficients: Terms:	10. Use the information you found in question #9 to graph the function. 

11. $y = x^2 + x - 6$ Factors: x-intercepts: (,) and (,) y-intercept: (,) Coefficients: Terms:	12. Use the information you found in question #11 to graph the function. 
13. $y = x^2 - 4$ Factors: x-intercepts: (,) and (,) y-intercept: ( ) Coefficients: Terms:	14. Use the information you found in question #13 to graph the function. 

Directions: REVIEW - Follow the directions for each problem.

15. Double distribute or use an Area Model to multiply the binomials: $(x+4)(x-2)$	16. Find the vertex of the following quadratic function. Then, state if the point is a max or a min. $y = 3x^2 - 12x + 5$

Vertex: (,)

Max or Min?

17. Write the equation for Area of a rectangle where the length is 2 less than 3 times the width.

Double distribute to write the quadratic equation in standard form.

18. A volleyball player bumps up a the ball from a height of 3 feet. The ball has an initial velocity of 15 feet per second.

When is the ball at it's highest point?

How high does the ball go?

How long is the ball in the air?

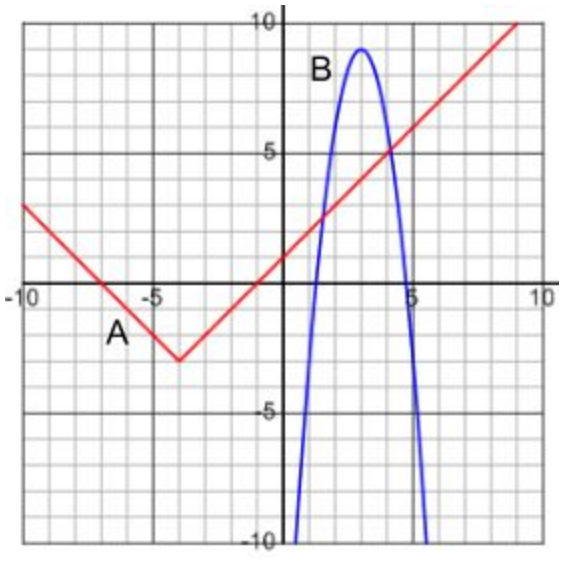
19. Write the equation from the table below in vertex form:

x	y
-5	5
-4	-1
-3	-3
-2	-1
-1	5
0	15

What is the Domain and Range of this function?

Domain:

20. Write the equations of the graphs below:



Equation A:

Equation B:

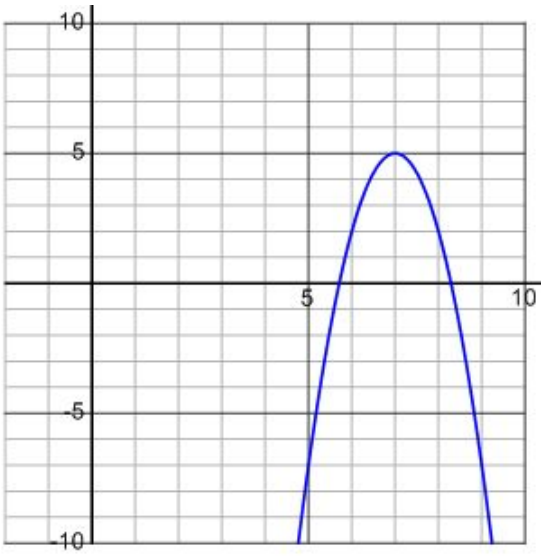
Range:	

21. Use the two functions f(x) and g(x) to answer the questions.

f(x) is in the equation:

$f(x) = -2x^2 + 16x - 30$

g(x) is graphed below:



A. Which function hits the maximum first (hint: which maximum has a smaller x-value)?

B. Which function has the greater maximum?