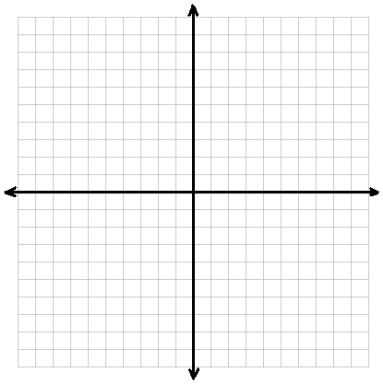
Name: _____ Date: _____ **Unit 5 Assessments**

Factoring & Graphing Quadratic Functions Quiz Review Sheet

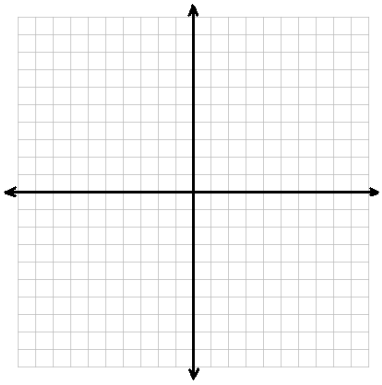
Directions: Be sure to show all work, communicate your thought process, and justify your reasoning. Remember to check that your answers are complete, correct, and reasonable.

1. Sketch a graph of each function.

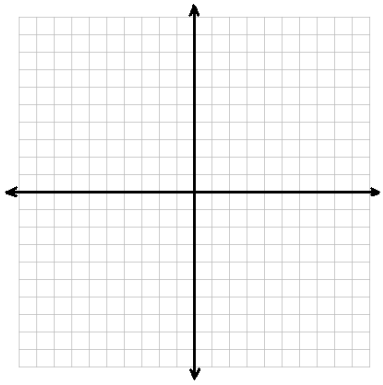
a. $f(x) = \frac{1}{3}(x-1)(x+3)$



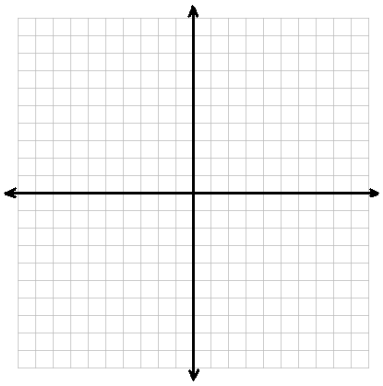
b. $y = -(x+2)^2 - 3$



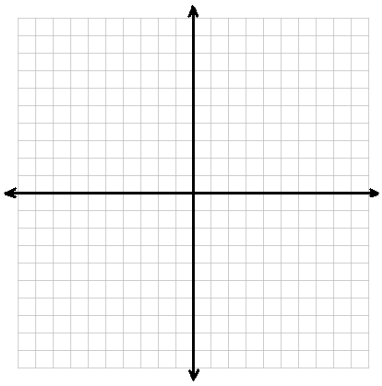
c. $y = x^2 - 25$



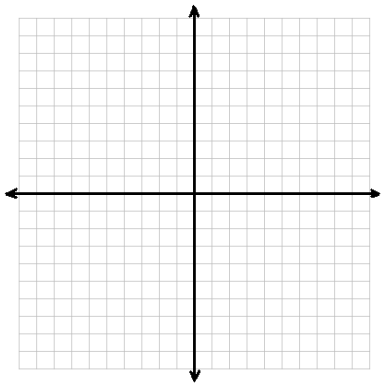
d. $f(x) = x^2 - 6x - 7$



e. $y = 2(x+4)^2 - 8$



f. $f(x) = (x+3)(x-6)$



2. Rewrite each function in intercept form (factor ☺). Then state the x-intercepts for any six.

a. $y = d^2 - 289$

b. $f(x) = 4 - 9x^2$

c. $f(x) = 8x^2 - 7x - 1$

d. $y = 8r^2 - 8r - 6$

e. $y = 48v^4 - 147$

f. $f(x) = x^2 + x - 56$

g. $f(x) = 361x^4 - 114x^2 + 9$

h. $y = 5h^3 - 65h^2 + 150h$

i. $y = 7w^2 + 27w - 40$

j. $f(x) = 72x^6 - 2$

j. $f(x) = x^2 + 12x - 28$

k. $y = 6m^3 + 15m^2 - 9m$

3. Determine the vertex, axis of symmetry, y-intercept, & maximum or minimum value for each function.

a. $f(x) = -\frac{1}{4}(x-4)(x+2)$

b. $y = 2(x-4)^2 - 12$

c. $f(x) = x^2 - 64$

d. $y = x^2 - 2x - 143$

e. $f(x) = 2(x-7)(x-9)$

f. $f(x) = -(x+12)(x-7)$

g. $f(x) = 4x^2 - 40x + 100$

h. $y = (x-3)^2 - 8$

i. $y = 4(x+1)^2 + 13$

4. Rewrite each expression without parentheses and with all like terms combined. Show all steps in arriving at the final expression.

a. $p^2 - 2p + 35 - (p-1)^2$

b. $b^8 - 256 - (b^4 - 16)^2$

c. $(2s^3 - 3c^3)^2 - (2s^3 + 3c^3)^2$

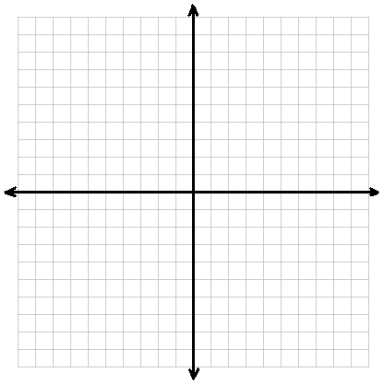
5. Consider the functions

$n(x) = x^2$

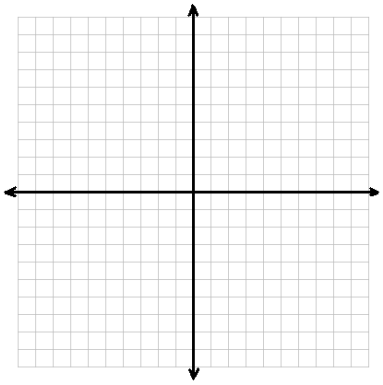
$s(x) = -3x + 10$

$t(x) = ½$

a. Graph the function given by n(x) – s(x).



b. Graph the function given by -t(x) * n(x).



c. Write each function, and expand completely. Then simplify by combining like terms.

Function A: 2n(x – 9) + 4s(x)

Function B: n(x + 3) – t(x) * s(x)

Function C: 2s(x) – n(3x – 4)