Factoring 2g **Putting it all together----Factoring and Solving** Name_____

For #1-5, match the terms with their descriptions.

1. $-\frac{b}{2a}$
2. Factors
3. Vertex
4. $y = ax^2 + bx + c$
5. x-intercepts

a. The highest or lowest point of a parabola

b. The points on a graph where the parabola crosses the x-axis

c. The general equation for a quadratic

d. The terms that multiply together to make your quadratic

e. The formula that will give you the x- value of your vertex

For questions #6-10, use the equation: $y = x^2 - 16x + 48$

6. The equation: will make this shape when I graph it: _____

7. For this equation, $a =$ _____ $b =$ _____ $c =$ _____

8. The vertex is an ordered pair. The x value of the vertex will be found using this formula: _____

   The x-value is: _____ The y-value is:_____ So the vertex is: (,)

9. If I wanted to factor this, I would ask: What numbers multiply to be _____ that add up to _____?

   I could use my diamond to help.

   The factors of $y = x^2 - 16x + 48$ are:

   _____

10. Once I know my factors, I can find my x-intercepts. I do this by setting each factor equal to zero.

    1st equation is: _____ $= 0$ 2nd equation is: _____ $= 0$

    My x-intercepts are: $x =$ _____ and $x =$ _____

For questions #11-15, use the equation: $f(x) = 2x^2 + 4x - 126$

11. The equation: will make this shape when I graph it: _____

12. For this equation, $a =$ _____ $b =$ _____ $c =$ _____

13. The vertex is an ordered pair. The x value of the vertex will be found using this formula: _____

    The x-value is: _____ The y-value is:_____ So the vertex is: (,)

14. If I wanted to factor this, I would ask myself: Is there a GCF I can take out first? YES! The GCF is _____

    a. If I take out the GCF, my new equation looks like this:

    b. What numbers multiply to be _____ that add up to _____

    I could use my diamond to help.

    The factors of my equation are:

    _____

    *Don't forget to include the GCF as one of your factors!!!

15. Once I know my factors, I can find my x-intercepts. I do this by setting each factor equal to zero. Since I am solving for x, it won't make sense to set my GCF equal to zero, because there isn't an x to solve for. So I will just use the factors.

    1st equation is: _____ $= 0$ 2nd equation is: _____ $= 0$

    My x-intercepts are: $x =$ _____ and $x =$ _____

Review:

Vertex of my parabola: Factored form of my equation: x-intercepts of my equation: