**Name:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Quadratically Inclined

Quadratic Functions can be written in Factored Form:

*f* (*x*) = a (*x* – *r*1) (*x* – *r*2)

Example:

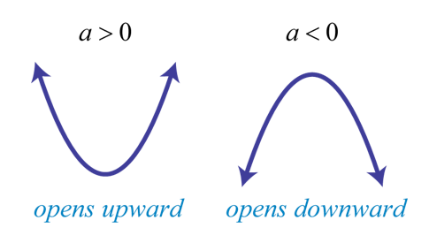
*f* (*x*) = 1 (*x* – 5) (*x* + 2)

Quadratic Functions can be written in Standard Form:

Example:

Quadratic Functions can be written in Vertex Form:

Example:

The coefficient **a** in the quadratic function indicates the opening of the parabola.

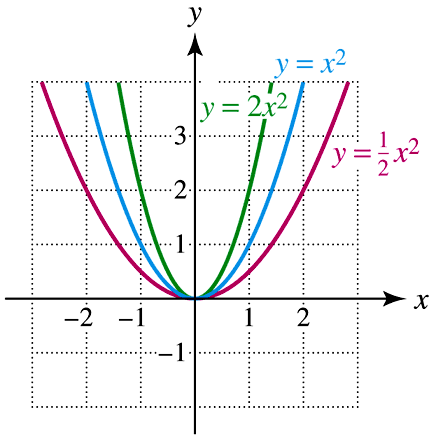


1.When **a** is positive, the parabola opens \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



2. When **a** is negative, the parabola opens \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=qeoyjsmmAjJR8M&tbnid=VLOV4-t_VWd-SM:&ved=0CAUQjRw&url=http://www.studyblue.com/notes/note/n/sophomore-phy-science-/deck/5225466&ei=x7q5Uv3cK8qisQTu9IHwCg&psig=AFQjCNH5Q3edHJhmi2PRfyKWk25G5DAonA&ust=1387989732099331)

The coefficient **a** in the quadratic function indicates the width of the parabola

(Hint: use the graphs to the right!)



3. When **a** is a fraction, the parabola is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



4. When **a** is a number greater than one,   
  
 the parabola is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



5. When the quadratic function is written in standard form, the factors will indicate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the function.



6. When the quadratic function is written in vertex form, the factors will indicate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the function.



7. When the quadratic function is written in factored form, the factors will indicate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the function.



**Use the equations give to find either the y-intercept, vertex, or factors of the quadratic.**



8*.* The y-intercept of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



*9.* The vertex of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



*10.* The zeros of the function are \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_



11*.* The y-intercept of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



*12.* The vertex of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



*13.* The zeros of the function are \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_



14*.* The y-intercept of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



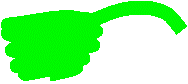
*15.* The vertex of the function is \_\_\_\_\_\_\_\_\_\_\_\_\_



*16.* The zeros of the function are \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_

**Use the information given to write a quadratic equation in either vertex or factored form.**

17. The vertex of the function is (4, -3) and the parabola opens upward.



*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



18. The zeros of the function are (-5, 0) and (4, 0) the parabola opens downward.



*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19. The zeros of the function are (-8, 0) and (3, 0) the parabola opens downward.



*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



20. The vertex of the function is (3, -4) and the parabola opens upward.



*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



21. The zeros of the function are (5, 0) and (2, 0), the parabola opens downward.



*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. The vertex of the function is (-2, 0), the parabola opens upward.

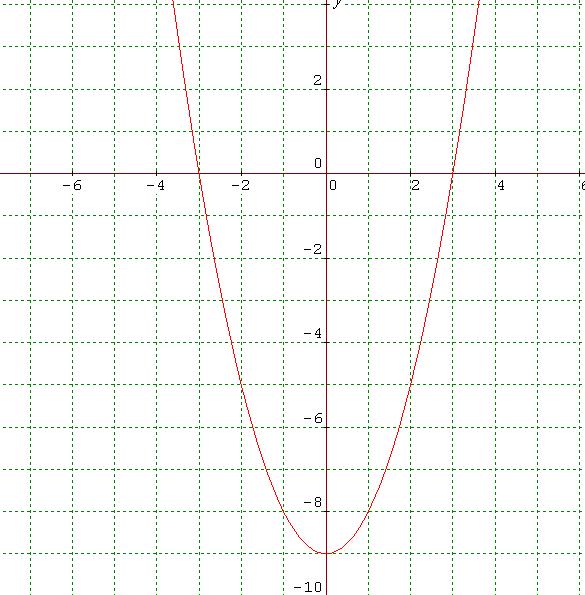


*f* (*x*) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Label the following key characteristics on the graph below:

1. Vertex
2. Zeros
3. Draw the axis of symmetry and label it.



[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=IVpS2U-Gq6aWoM&tbnid=8954xzGKhaQ-NM:&ved=0CAUQjRw&url=http://math.tutorvista.com/algebra/quadratic-graph.html&ei=ScDAUoPXIoHesAT3roLQDQ&bvm=bv.58187178,d.eW0&psig=AFQjCNFN1ieg9LepoP6fpja037Ae1Ix4cw&ust=1388449979228561)**Use the graph at the right to answer the following**

**questions:**

24) What is the vertex of the parabola?



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



25) What are the zeros of the function?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



26) Does the function have a maximum or a minimum?



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

