**Quadratic Function: standard form\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** sometimes called a \_\_\_\_\_\_\_\_\_\_\_\_

Vertex:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Axis of symmetry:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Form: . Graph each quadratic function. Label the vertex and axis of symmetry.

**1.  2. **

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

**3.  4. **

|  |  |
| --- | --- |
| *x* | *y* |
| -6 |  |
| -3 |  |
| 0 |  |
| 3 |  |
| 6 |  |

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

**4.** Compare the graphs from #1 and #2. How are they similar? How do they differ?

**5.** Compare the graphs of #1, #3, and #4. How are they similar? How do they differ?

**6.** What is the *y-*intercept of each graph?

Based on Graphs #1 – 2, we can conclude that for :

* If , then the parabola will open \_\_\_\_\_\_\_\_\_\_\_\_ , the vertex will be \_\_\_\_\_\_\_ and the axis of symmetry will be \_\_\_\_\_\_\_\_\_\_.
* If , then the parabola will open \_\_\_\_\_\_\_\_\_\_\_\_ , the vertex will be \_\_\_\_\_\_\_ and the axis of symmetry will be \_\_\_\_\_\_\_\_\_\_.

Form: .

**7.  8. **

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

**9.  10. **

|  |  |
| --- | --- |
| *x* | *y* |
| -6 |  |
| -3 |  |
| 0 |  |
| 3 |  |
| 6 |  |

|  |  |
| --- | --- |
| *x* | *y* |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

**11.** Compare the graphs from #1, #7 and #8. How are they similar? How do they differ?

**12.** Compare the graphs from #3 and #9, then #4 and #10. How are they similar? How do they differ?

**13.** Find the *y-*intercept of #7 – 10. Compare the value of *c* and the *y-*intercept of each graph.

Based on Graphs #7 – 10, we can conclude that for :

* The value of *c* determines the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the graph.
* What does a determine (two characteristics) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_