**Secondary Math 2 8.1 Homework Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_**

**Graphing and Analyzing Quadratic Equations (By Plotting Points)**

**Graph the quadratic function by plotting points. Identify the key features.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | $$f\left(x\right)=x^{2}-2x-3$$

|  |  |
| --- | --- |
| x | y |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |

 |  | **Vertex (**Max/Min)**:****Axis of Symmetry:****y-intercepts:** **x-intercepts:** **Domain:** **Range:**  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | $$f\left(x\right)=-2x^{2}-4x-5$$

|  |  |
| --- | --- |
| x | y |
| 1 |  |
| 0 |  |
| -1 |  |
| -2 |  |
| -3 |  |

 |  | **Vertex (**Max/Min)**:****Axis of Symmetry:****y-intercepts:** **x-intercepts:** **Domain:** **Range:**  |

**Review Problems:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Solve for x:$$-2\left(x-3\right)^{2}=10$$ |  | Solve for x by factoring:$$4x^{2}-16x-20=0$$ |
|  | Simplify: $3x\*2x^{\frac{2}{3}}$ |  | Simplify:$$\frac{2x^{\frac{1}{2}}}{4x^{2}}$$ |

**Extended Understanding:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Given the equation: $y=\left(x-3\right)^{2}-4$a) Set the equation equal to zero and solve for x:b) Set $x=0$ and solve for y.c) Plot the following points:

|  |  |
| --- | --- |
| x | y |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

d) What do you notice about the lowest point on the graph and the equation of the parabola? e) Graph the quadratic equation |  | Given the equation: $y=(x-1)(x-5)$a) Set the equation equal to zero and solve for x:b) Set $x=0$ and solve for y.c) Plot the following points:

|  |  |
| --- | --- |
| x | y |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

d) What do you notice about the x-intercepts of the graph and the equation of the parabola?e) Graph the quadratic equation |