**Secondary Math 2 8.2 Homework Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_**

**Graphing Quadratics by Switching Forms**

1. Use $f\left(x\right)=x^{2}-8x-9$ to answer the following questions:

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| --- | --- | --- | --- |
|  | Rewrite $f(x)$ in Intercept Form. Hint: Factor. |  | Rewrite $f(x)$ in Vertex Form. Hint: $f\left(x\right)=a\left(x-h\right)^{2}+k$ |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | What is the Vertex of $f(x)$? |  | What are the zeros of $f(x)$? |  | What is the y-intercept of $f(x)$? |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Plot 5 points that will help you graph an accurate picture of the graph (hint: graph the vertex at the center and two “anchor” points on each side of the vertex)

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
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|  |  |

 |  | Sketch the graph of $f(x)$. Label the vertex, x and y intercepts.http://etc.usf.edu/clipart/49300/49310/49310_graph_blank_md.gif |

1. Use $g\left(x\right)=x^{2}+2x-3$ to answer the following questions:

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| --- | --- | --- | --- |
|  | Rewrite $g(x)$ in Intercept Form. Hint: Factor. |  | Rewrite $g(x)$ in Vertex Form. Hint: $f\left(x\right)=a\left(x-h\right)^{2}+k$ |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | What is the Vertex of $g(x)$? |  | What are the zeros of $g(x)$? |  | What is the y-intercept of $g(x)$? |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Plot 5 points that will help you graph an accurate picture of the graph (hint: graph the vertex at the center and two “anchor” points on each side of the vertex)

|  |  |
| --- | --- |
| x | y |
|  |  |
|  |  |
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|  |  |
|  |  |

 |  | Sketch the graph of $g(x)$. Label the vertex, x and y intercepts.http://etc.usf.edu/clipart/49300/49310/49310_graph_blank_md.gif |

**Review Problems:**

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| --- | --- | --- | --- |
|  | Complete the square and solve:$$x^{2}=-8x+48$$ |  | Solve by factoring:$$3x^{2}+17x+20=0$$ |
|  | Solve using any method:$$x^{2}-36=0$$ |  | Solve using any method:$$\left(x-2\right)^{2}=16$$ |

**Extended Understanding:** Given the function $g(x)$, answer the following questions and sketch the graph.

|  |  |  |
| --- | --- | --- |
|  | $$g\left(x\right)=(x-2)(x+4)$$ | a) Write the equation in vertex form.b) What is the coordinate of the vertex?c) What is the equation of the axis of symmetry?d) What are the real roots of the function? |