Math I Unit 9 Study Guide Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**OBJ. 1: Quadratic Functions**

1. Given**:** $f\left(x\right)= -x^{2}-6x-8$

|  |  |
| --- | --- |
| **How does the graph open?** |  **Up or Down** |
| **Does it have a Min or Max?** |  **Min or Max** |
| **State the y-intercept** |  |
| **State the Axis of Symmetry** |  |
| **State the Vertex** |  |
| **State the Solutions** |  |
| **State the Domain** |  |
| **State the Range** |  |

2. Given $0=x^{2}-25$

|  |  |
| --- | --- |
| **How does the graph open?** |  **Up or Down** |
| **Does it have a Min or Max?** |  **Min or Max** |
| **State the y-intercept** |  |
| **State the Axis of Symmetry** |  |
| **State the Vertex** |  |
| **State the Solutions** |  |
| **State the Domain** |  |
| **State the Range** |  |

3. Given**:** $-2x^{2}+8x+24=0$

|  |  |
| --- | --- |
| **How does the graph open?** |  **Up or Down** |
| **Does it have a Min or Max?** |  **Min or Max** |
| **State the y-intercept** |  |
| **State the Axis of Symmetry** |  |
| **State the Vertex** |  |
| **State the Solutions** |  |
| **State the Domain** |  |
| **State the Range** |  |

4. **Given the graph at the right**

|  |  |
| --- | --- |
| **How does the graph open?** |  **Up or Down** |
| **Does it have a Min or Max?** |  **Min or Max** |
| **State the y-intercept** |  |
| **State the Axis of Symmetry** |  |
| **State the Vertex** |  |
| **State the Solutions** |  |
| **State the Domain** |  |
| **State the Range** |  |

 **OBJ. 2: Quadratic Functions: Vertex and Axis of Symmetry**

9. Which of the following is the graph of the function *f*(*x*) = 2*x*2 + 3*x* + 4?



* 1. B.



C. D.

10. Which best describes the graph of the equation *f(x) = 2x² + 12x + 3* ?

* 1. Vertex is (3, 57), it opens up and has a minimum.
	2. Vertex is (3, 57), it opens down and has a minimum
	3. Vertex is (-3, -15), it opens down and has a maximum
	4. Vertex is (-3,-15), it opens up and has a minimum
	5. Vertex is (-3, -51), it opens up and has a maximum

11. What are the roots (solutions) of *f(x) = x2 + 4x – 12*

12. A company models its net income with the function,$f\left(x\right)=3x^{2}-18x-48$ where x is the number of units sold. How many units of its product does the company need to sell in order for the net income to equal $0