

Secondary Math III  
Unit 2 Review  
Assignment 2.7

Name \_\_\_\_\_  
Period \_\_\_\_\_

**Show work to receive credit.**

**Convert each quadratic function to standard form**

1.  $f(x) = (x + 5)(x - 7)$

2.  $f(x) = -2(x + 1)^2 - 5$

3.  $f(x) = -(x - 6)^2 + 4$

4.  $f(x) = -3(x - 1)(x - 3)$

**Find the zeros of each quadratic function**

5.  $f(x) = 5(x + 2)(x - 4)$

6.  $f(x) = x^2 + 4x + 1$

7.  $f(x) = x^2 + 1 - 12$

8.  $f(x) = 2x^2 - 5x + 9$

**Calculate the value of  $i$  without a calculator.**

9.  $i^{84}$

10.  $i^{37}$

11.  $i^{99}$

12.  $i^{14}$

**Simplify each expression**

13.  $\sqrt{-18}$

14.  $-7 + 3i + 10 - 2i$

15.  $(3 + i)(2 + 4i)$

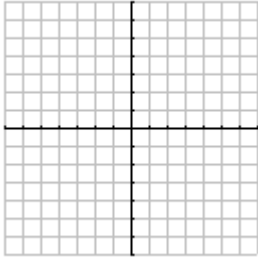
16.  $7 + 2i(4 - 3i)$

17.  $(6 + 2i)(2 - 7i)$

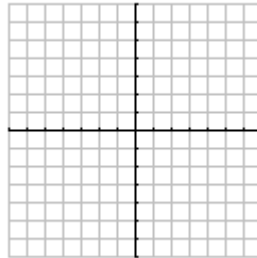
18.  $(2 + 5xi) - (4 - 8xi)$

**Graph the quadratic functions. Label the vertex and two other points.**

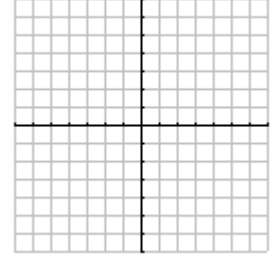
19.  $f(x) = 3x^2 + 6x - 5$



20.  $f(x) = (x - 5)^2 - 4$



21.  $f(x) = 3(x - 2)(x + 6)$



22. If a football is thrown upward from ground level with an initial velocity of 32 feet per second, then its height is a function of time, given by  $s(t) = -16t^2 + 32t$ . What is the maximum height reached by the ball?

23. What is the vertex of  $4x^2 + 12x + 2$

**24. Describe the transformations**

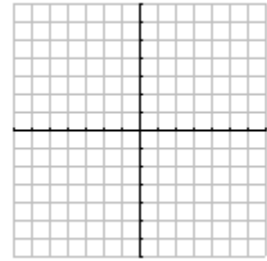
a.  $f(x) = -(x + 6)^2 + 12$

b.  $f(x) = 2(x - 3)^2 - 1$

c.  $f(x) = (-x + 2)$

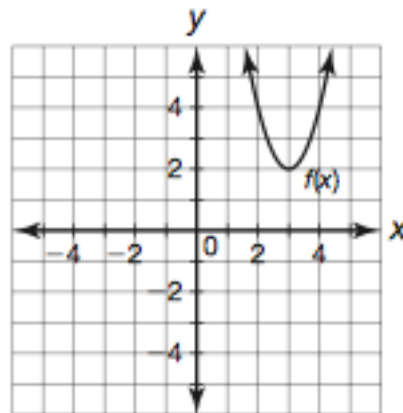
d.  $f(x) = (3x)$

25. Solve the following quadratic inequalities. Give your solution in inequality form or interval notation. Sketch a graph to justify your answers.  $(x + 4)(x - 3) \leq -7x - 27$



Solution: \_\_\_\_\_

26. Write the function that represents the graph.



$f(x) =$  \_\_\_\_\_

27. The function  $p(x)$  is shown. If  $f(x) = x^2$ , write  $p(x)$  in terms of  $f(x)$ .

