

Algebra 2

Name \_\_\_\_\_

Quadratics Lesson 2 Review

Date \_\_\_\_\_

1. Find the coordinates of the max/min points,  $x$ -intercepts, and  $y$ -intercepts on graphs of  $f(x) = (x + 2)^2 - 9$ .

Factor completely.

2.  $3x^2 - 7x - 6$

3.  $x^3 - x^2 - 8x + 8$

4.  $x^2 + 36$

5.  $25x^2 - 81$

6.  $3x^2 - 15x + 18$

7.  $x^2 + 10x$

8.  $2x^2 + 13x - 7$

9.  $3x^2 - 48$

10. Given the function,  $f(x) = x^2 + 12x + 11$

a. Write the rule in vertex form and find the coordinates of the max/min point on its graph.

b. Use the results of part a to solve the equation  $x^2 + 12x + 11 = 0$ .

11. Given the function,  $f(x) = x^2 - 18x + 74$

a. Write the rule in vertex form and find the coordinates of the max/min point on its graph.

b. Use the results of part a to solve the equation  $x^2 - 18x + 74 = 13$ .

Solve by factoring.

$$12. \ 2x^2 + x - 3 = 0$$

$$13. \ x^3 + x^2 - 81x - 81 = 0$$

Solve with quadratic formula and leave answers in simplest radical form or a+bi form.

$$14. \ x^2 + 4x + 9 = 0$$

$$15. \ x^2 - 6x - 11 = 0$$

ANSWERS:

1. Minimum: (-2, -9)  
x-intercepts: (-5, 0) and (1, 0)  
y-intercept: (0, -5)

2.  $(3x + 2)(x - 3)$

3.  $(x^2 - 8)(x - 1)$

4. Not factorable

5.  $(5x + 9)(5x - 9)$

6.  $3(x - 2)(x - 3)$

7.  $x(x + 10)$

8.  $(2x - 1)(x + 7)$

9.  $3(x + 4)(x - 4)$

10. a.  $f(x) = (x+6)^2 - 25$   
Minimum: (-6, -25)

b.  $x = -1$  or  $x = -11$

11. a.  $f(x) = (x-9)^2 - 7$   
Minimum: (9, -7)

b.  $x = 9 \pm \sqrt{20}$

12.  $x = \frac{-3}{2}$  or  $x = 1$

13.  $x = -9$  or  $x = -1$  or  $x = 9$

14.  $x = -2 \pm i\sqrt{5}$

15.  $x = 3 \pm 2\sqrt{5}$