College Prep Math **Name: _____**

Unit 6 Review: Solving Quadratic Equations

Solve each equation for *x*. (HINT: USE FACTORING)

1) $x^2 + 3x = 10$

2) $-7x = x^2 + 12$

3) $a^2 - 3a = -4 - 7a$

4) $x^2 - 23x + 60 = 0$

5) $x^2 - 6x = 0$

6) $3x^2 + 11x + 6 = 0$

Solve each equation for *x*. (HINT: USE SQUARE ROOTS) Round to 2 decimal places if necessary.

7) $x^2 = 64$

8) $x^2 = 9$

9) $x^2 = 100$

10) $x^2 - 12 = 37$

11) $x^2 - 81 = 0$

12) $5x^2 - 9 = 116$

13) $-4x^2 + 42 = -102$

14) $3x^2 + 25 = 73$

15) $-3x^2 + 200 = 8$

16) $(x - 5)^2 = 100$

17) $2(x + 3)^2 = 50$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Solve each equation for *x*. (HINT: USE QUADRATIC FORMULA) Round to 2 decimal places if necessary.

18) $2x^2 + 3x - 20 = 0$

19) $6b^2 + 8b + 7 = 2b^2 + 4$

20) $3x^2 - 6x + 1 = 0$

21) $x^2 + 7x + 8 = 0$

Solve each equation for *x*. (HINT: USE QUADRATIC FORMULA) Leave irrational solutions in exact form.

22) $2h^2 - 7h - 13 = -10$

23) $2x^2 + 5x - 3 = 0$

24) Match the prompt to the correct scenario for $f(x) = ax^2 + bx + c$

_____ $f(x)$ has zero x-intercepts.

_____ $f(x)$ has one x-intercept.

_____ $f(x)$ has two x-intercepts.

A) The discriminant ($b^2 - 4ac$) is positive.

B) The discriminant ($b^2 - 4ac$) is zero.

C) The discriminant ($b^2 - 4ac$) is negative.

Find the discriminant. Then, use the discriminant to determine the number of unique real solutions.

25) $9x^2 + 24x + 16 = 0$

26) $-7g^2 + 8g = -2$

27) $3x^2 + 2x + 2 = 0$

28) $x^2 - 8x = -7$