Secondary Math 2 Name_____

Unit 4 Solving Quadratics Review

Date_____ Period____

Fill in the blank.

1) Before you start solving an equation, one side should equal ___. 0

Describe the best time to use each method to solve a quadratic equation.

2) Take a square root

x^2 or $(x + c)^2$; no bx term

3) Factoring

When it factors

4) Complete the square

When a=1 and b is even

5) Quadratic formula

When nothing else works (or anytime in standard form)

List each possible method that can be used to solve the problem. YOU DO NOT NEED TO SOLVE.

6) $6b^2 - b - 12 = 0$

Factoring
Quadratic formula

7) $n^2 - 8n - 11 = 0$

Complete the square
Quadratic formula

8) $8n^2 - 15 = 0$

Take a square root
Quadratic formula

9) $9b^2 + 2b + 7 = 0$

Quadratic formula

10) $x^2 - 36 = 0$

Factoring
Take a square root
Quadratic formula

11) $r^2 - 4r - 117 = 0$

Factoring
Complete the square
Quadratic formula

Solve each equation by factoring.

12) $b^2 + 9b + 14 = -6$

$\{-4, -5\}$

13) $m^2 + 2m - 21 = -6$

$\{-5, 3\}$

14) $4x^2 + 16x + 14 = 2$

$\{-1, -3\}$

15) $4a^2 - 12a - 23 = -7$

$\{-1, 4\}$

16) $25k^2 - 10k - 6 = 2$

$\left\{-\frac{2}{5}, \frac{4}{5}\right\}$

17) $2m^2 + 15m - 15 = -7$

$\left\{\frac{1}{2}, -8\right\}$

Solve each equation by taking square roots.

18) $2x^2 - 8 = 154$

$\{9, -9\}$

19) $9x^2 - 1 = 890$

$\{3\sqrt{11}, -3\sqrt{11}\}$

20) $6m^2 + 6 = -30$

$\{i\sqrt{6}, -i\sqrt{6}\}$

21) $4n^2 + 2 = 394$

$\{7\sqrt{2}, -7\sqrt{2}\}$

Find the value of c that completes the square.

22) $n^2 + 36n + c$

324

23) $m^2 - 38m + c$

361

Solve each equation by completing the square.

24) $p^2 - 12p - 55 = -7$

$\{6 + 2\sqrt{21}, 6 - 2\sqrt{21}\}$

25) $p^2 + 2p + 91 = -4$

$\{-1 + i\sqrt{94}, -1 - i\sqrt{94}\}$

26) $b^2 + 20b + 8 = 9$

$\{-10 + \sqrt{101}, -10 - \sqrt{101}\}$

27) $b^2 + 6b + 56 = 3$

$\{-3 + 2i\sqrt{11}, -3 - 2i\sqrt{11}\}$

Solve each equation with the quadratic formula.

28) $4n^2 + 10n + 12 = 3$

$\left\{\frac{-5 + i\sqrt{11}}{4}, \frac{-5 - i\sqrt{11}}{4}\right\}$

29) $11v^2 - 9v - 1 = -11$

$\left\{\frac{9 + i\sqrt{359}}{22}, \frac{9 - i\sqrt{359}}{22}\right\}$

30) $x^2 - 5x - 1 = -11$

$\left\{\frac{5 + i\sqrt{15}}{2}, \frac{5 - i\sqrt{15}}{2}\right\}$

31) $12a^2 + 8a - 21 = 2$

$\left\{\frac{-2 + \sqrt{73}}{6}, \frac{-2 - \sqrt{73}}{6}\right\}$

Solve each equation with whichever method you'd like.

32) $6x^2 - 59 = -5$

$\{3, -3\}$

33) $m^2 + 4m - 138 = 2$

$\{10, -14\}$

34) $n^2 - 3n - 19 = -5$

$\left\{\frac{3 + \sqrt{65}}{2}, \frac{3 - \sqrt{65}}{2}\right\}$

35) $3k^2 + 5k - 3 = 9$

$\left\{\frac{4}{3}, -3\right\}$

36) $9x^2 + 12x - 4 = -11$

$\left\{\frac{-2 + i\sqrt{3}}{3}, \frac{-2 - i\sqrt{3}}{3}\right\}$

37) $n^2 - 4n - 8 = -4$

$\{2 + 2\sqrt{2}, 2 - 2\sqrt{2}\}$