

Group Members: Key

Bell: _____



Review: Solving Quadratic Equations

Work through each problem with your group members. Each person of the group should be participating and writing on their own paper.

At the end of the bell, Mrs. Wilson will choose one person's paper at random to collect and grade for the group.

factoring:

1. $7x^2 + 7x = 0$

$$7x(x+1) = 0$$

$$7x = 0 \quad x+1 = 0$$

$$x = \{0, -1\}$$

2. $10x^2 - 25 = x^2$

$$9x^2 - 25 = 0$$

$$(3x+5)(3x-5) = 0$$

$$x = \left\{ -\frac{5}{3}, \frac{5}{3} \right\}$$

3. $2x^2 + 80 = 26x$

$$2x^2 - 26x + 80 = 0$$

$$2(x^2 - 13x + 40) = 0$$

$$2(x-5)(x-8) = 0$$

$$x = \{5, 8\}$$

4. $4x^2 + 5x + 1 = 0$

$$x^2 + 5x + 4 = 0$$

$$(x+\frac{4}{4})(x+\frac{1}{4}) = 0$$

$$(x+1)(4x+1) = 0$$

$$x = \left\{ -1, -\frac{1}{4} \right\}$$

SQUARE ROOTS:

5. $\sqrt{x^2} = \sqrt{225}$

$$x = \{-15, 15\}$$

6. $4x^2 = 49$

$$\sqrt{x^2} = \sqrt{\frac{49}{4}}$$

$$x = \left\{ -\frac{7}{2}, \frac{7}{2} \right\}$$

7. $x^2 - 3 = 38$

$$\sqrt{x^2} = \sqrt{41}$$

$$x = \{6.40, -6.40\}$$

8. $\frac{3}{4}x^2 + 1 = 16$

$$\left(\frac{4}{3}\right)\frac{3}{4}x^2 = 15\left(\frac{4}{3}\right)$$

$$\sqrt{x^2} = \sqrt{20}$$

$$x = \{-4.47, 4.47\}$$

THE QUADRATIC FORMULA:

9. $3x^2 - 10x + 5 = 0$

$$x = \frac{10 \pm \sqrt{(-10)^2 - 4(3)(5)}}{2(3)}$$

$$x = \frac{10 \pm \sqrt{40}}{6}$$

$$x = \{2.72, 0.61\}$$

10. $4x^2 - 6x - 5 = 0$

$$x = \frac{6 \pm \sqrt{(-6)^2 - 4(4)(-5)}}{2(4)}$$

$$x = \frac{6 \pm \sqrt{116}}{8}$$

$$x = \{2.10, -0.60\}$$

$$11. -x^2 + 4x = 9 \rightarrow -x^2 + 4x - 9 = 0$$

$$x = \frac{-4 \pm \sqrt{4^2 - 4(-1)(-9)}}{2(-1)}$$

$$x = \frac{-4 \pm \sqrt{20}}{-2}$$

$$x = \emptyset$$

$$12. 2x^2 - 4x = 3 \rightarrow 2x^2 - 4x - 3 = 0$$

$$x = \frac{4 \pm \sqrt{(-4)^2 - 4(2)(-3)}}{2(2)}$$

$$x = \frac{4 \pm \sqrt{40}}{4}$$

$$x = \{2.58, -0.58\}$$

YOUR CHOICE!

$$13. x^2 - 2x = 4 \rightarrow x^2 - 2x - 4 = 0$$

$$x = \frac{2 \pm \sqrt{(-2)^2 - 4(1)(-4)}}{2(1)}$$

$$x = \frac{2 \pm \sqrt{20}}{2}$$

$$x = \{3.24, -1.24\}$$

$$14. 10x^2 + x - 2 = 0$$

$$x^2 + x - 20 = 0$$

$$(x+5)(x-4) = 0$$

$$(2x+1)(5x-2) = 0$$

$$x = \left\{ -\frac{1}{2}, \frac{2}{5} \right\}$$

$$15. 5x^2 - 15x - 50 = 0$$

$$5(x^2 - 3x - 10) = 0$$

$$5(x-5)(x+2) = 0$$

$$x = \{5, -2\}$$

$$16. 36x^2 = 9x$$

$$36x^2 - 9x = 0$$

$$9x(4x-1) = 0$$

$$x = \left\{ 0, \frac{1}{4} \right\}$$

$$17. 2x^2 + 3x = 2 \rightarrow 2x^2 + 3x - 2 = 0$$

$$x^2 + 3x - 4 = 0$$

$$(x+\frac{4}{2})(x-\frac{1}{2}) = 0$$

$$(x+2)(2x-1) = 0$$

$$x = \left\{ -2, \frac{1}{2} \right\}$$

$$18. x^2 + 10x = 4 \rightarrow x^2 + 10x - 4 = 0$$

$$x = \frac{-10 \pm \sqrt{10^2 - 4(1)(-4)}}{2(1)}$$

$$x = \frac{-10 \pm \sqrt{116}}{2}$$

$$x = \{0.39, -10.39\}$$

$$19. 6x^2 = 48$$

$$\sqrt{x^2} = \sqrt{8}$$

$$x = \{-2.83, 2.83\}$$

$$20. 4x^2 = 4x + 7 \rightarrow 4x^2 - 4x - 7 = 0$$

$$x = \frac{4 \pm \sqrt{(-4)^2 - 4(4)(-7)}}{2(4)}$$

$$x = \frac{4 \pm \sqrt{128}}{8}$$

$$x = \{1.91, -0.91\}$$



Name: _____

Unit 8: Quadratic Equations

Date: _____ Bell: _____

Homework 9: Solving Quadratics Review
(All Methods)

**** This is a 2-page document! ****

Use factoring, square roots method, or the Quadratic Formula to solve the following.

1. $x^2 - 8x - 20 = 0$

$$(x-10)(x+2) = 0$$

$$x = \{10, -2\}$$

2. $9x^2 - 15x = 0$

$$3x(3x-5) = 0$$

$$x = \left\{0, \frac{5}{3}\right\}$$

3. $16x^2 - 25 = 0$

$$(4x+5)(4x-5) = 0$$

$$x = \left\{-\frac{5}{4}, \frac{5}{4}\right\}$$

4. $x^2 - 8x - 2 = 0$

$$x = \frac{8 \pm \sqrt{(-8)^2 - 4(1)(-2)}}{2(1)}$$

$$x = \frac{8 \pm \sqrt{72}}{2}$$

$$x = \{8.24, -0.24\}$$

5. $x^2 + 3x - 40 = 0$

$$(x+8)(x-5) = 0$$

$$x = \{-8, 5\}$$

6. $x^2 - 15 = 0$

$$\sqrt{x^2} = \sqrt{15}$$

$$x = \{3.87, -3.87\}$$

7. $x^2 + 49 = 14x$

$$x^2 - 14x + 49 = 0$$

$$(x-7)(x-7) = 0$$

$$x = \{7\}$$

8. $3x^2 + x - 1 = 0$

$$x = \frac{-1 \pm \sqrt{1^2 - 4(3)(-1)}}{2(3)}$$

$$x = \frac{-1 \pm \sqrt{13}}{6}$$

$$x = \{0.43, -0.77\}$$

9. $18x^2 = 24x$

$$18x^2 - 24x = 0$$

$$6x(3x - 4) = 0$$

$$x = \left\{ 0, \frac{4}{3} \right\}$$

10. $x^2 - 7x + 12 = 3x - 4$

$$x^2 - 10x + 16 = 0$$

$$(x - 8)(x - 2) = 0$$

$$x = \{ 8, 2 \}$$

11. $x^2 - 11x + 28 = 0$

$$(x - 4)(x - 7) = 0$$

$$x = \{ 4, 7 \}$$

12. $5x^2 - 1 = 3x^2 + 9x$

$$2x^2 - 9x - 1 = 0$$

$$x = \frac{9 \pm \sqrt{(-9)^2 - 4(2)(-1)}}{2(2)}$$

$$x = \frac{9 \pm \sqrt{89}}{4}$$

$$x = \{ 4.61, -0.11 \}$$

13. $x^2 - 5 = 76$

$$\sqrt{x^2} = \sqrt{81}$$

$$x = \{ -9, 9 \}$$

14. $2x^2 - 5x = 3$

$$2x^2 - 5x - 3 = 0$$

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

$$(x - \frac{6}{2})(x + \frac{1}{2}) = 0$$

$$(x - 3)(2x + 1) = 0$$

$$x = \{ 3, -\frac{1}{2} \}$$

15. $9x^2 = 64$

$$x^2 = \frac{64}{9}$$

$$x = \left\{ -\frac{8}{3}, \frac{8}{3} \right\}$$

16. $\frac{1}{3}x^2 - 1 = 5$

$$\frac{1}{3}x^2 = 6$$

$$\sqrt{x^2} = \sqrt{18}$$

$$x = \{ -4.24, 4.24 \}$$