

Intermediate Algebra
Solving Review Homework

Name: _____
Date: _____ Block: _____

Meth

Solve each quadratic equation. You must use each of these methods at least once: factoring, square roots, complete the square, and the quadratic formula.

1) $5x^2 - 10x = 0$

Method: Factoring

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

$$5x = 0 \quad x - 2 = 0$$

$$\boxed{x = 0 \quad x = 2}$$

2) $2x^2 - 9x = x^2 - 20$ $x^2 - 9x + 20 = 0$

Method: Factoring

$$\cancel{x^2} (x-5)(x-4) = 0$$

$$\boxed{x = 5 \quad x = 4}$$

m20
A-9
-5, -4

3) $2x^2 - 50 = 0$

Method: Square Root

$$2x^2 = 50$$

$$x^2 = 25$$

$$\boxed{x = \pm 5}$$

4) $x^2 + 6x - 16 = 0$

Method: Factoring

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

$$\boxed{x = -8 \quad x = 2}$$

m-16
A 6
8, -2

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

Method: Factoring

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

$$\boxed{x = 2 \quad x = 1}$$

m2
A-3
-2, -1

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

Method: Factoring

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

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

$$\boxed{x = -2 \quad x = 1}$$

7) $x^2 + 7x + 12 = 0$ m12 A7

Method: Factoring

$$(x+4)(x+3) = 0$$

$$x = -4 \quad x = -3$$

8) $2x^2 + 5x - 3 = 0$

Method: Factoring

$$2x^2 + 6x - x - 3 = 0$$

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

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

$$x = 1/2 \quad x = -3$$

m-6
A 5
6, -1

Solve each quadratic equation. You must use each of these methods at least once: factoring, square roots, complete the square, and the quadratic formula.

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

Method: Factoring

$x = 0 \quad x = 3$

10) $x^2 - 8x + 5 = 0$

Method: Complete the Square Factoring
Does not
work

$x^2 - 8x + 16 = -5 + 16$
 $(x-4)^2 = 11$

$x - 4 = \pm \sqrt{11}$

$x = 4 \pm \sqrt{11}$

11) $x^2 + 12x + 4 = 0$

Method: Complete the Square

$x^2 + 12x + 36 = -4 + 36$

$(x+6)^2 = 32$

$x+6 = \pm \sqrt{32}$

$x+6 = \pm 4\sqrt{2}$

$x = -6 \pm 4\sqrt{2}$



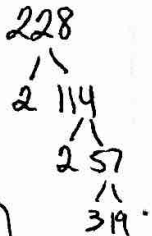
12) $3x^2 - 12x - 7 = 0$

Method: Quad. Formula m - 21
A - 12

$x = \frac{12 \pm \sqrt{144 - 4(3)(-7)}}{6}$

$= \frac{12 \pm \sqrt{228}}{6}$

$= \frac{12 \pm 2\sqrt{57}}{6} = \frac{6 \pm \sqrt{57}}{3}$



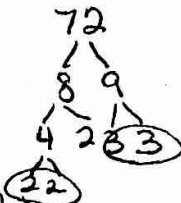
13) $-2x^2 - 12x - 9 = 0$

Method: Quad Form

$x = \frac{12 \pm \sqrt{144 - 4(-2)(-9)}}{-4}$

$= \frac{12 \pm \sqrt{72}}{-4}$

$= \frac{12 \pm 6\sqrt{2}}{-4} = \frac{6 \pm 3\sqrt{2}}{-2}$



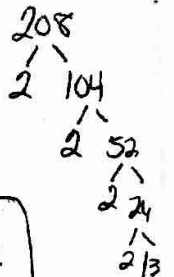
14) $4x^2 + 8x - 9 = 0$

Method: Quad Form

$x = \frac{-8 \pm \sqrt{64 - 4(4)(-9)}}{8}$

$= \frac{-8 \pm \sqrt{208}}{8}$

$= \frac{-8 \pm 4\sqrt{13}}{8} = \frac{-2 \pm \sqrt{13}}{2}$



15) $-3x^2 - 18x - 35 = 0$

Method: Quad. Formula

$x = \frac{18 \pm \sqrt{324 - 4(-3)(-35)}}{-6}$

$= \frac{18 \pm \sqrt{-96}}{-6}$

\emptyset Real Solutions

16) $5x^2 + 20x + 32 = 0$

Method: Quad Form

$x = \frac{-20 \pm \sqrt{400 - 4(5)(32)}}{10}$

$= \frac{-20 \pm \sqrt{-240}}{10}$

No Real Solutions