Quadratic Formula Practice Name_____

Practice: Solve each equation with the quadratic formula.

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

a = 3 b = -3 c = -6

$x = \frac{-(-3) \pm \sqrt{(-3)^2 - 4(+3)(-6)}}{2(3)}$

$x = \frac{3 \pm \sqrt{81}}{6}$

$x = \frac{3 \pm 9}{6}$

$x = \frac{12}{6} = 2$

$x = \frac{3-9}{2} = -3$

2) $x^2 + 10x - 75 = 0$

a = 1 b = 10 c = -75

$x = \frac{-(10) \pm \sqrt{(10)^2 - 4(1)(-75)}}{2(1)}$

$x = \frac{-10 \pm \sqrt{400}}{2} = \frac{-10 \pm 20}{2}$

$x = \frac{-30}{2} = -15$

$x = \frac{10}{2} = 5$

3) $6x^2 + 5x - 99 = 0$

a = 6 b = 5 c = -99

$x = \frac{-(5) \pm \sqrt{(5)^2 - 4(6)(-99)}}{2(6)}$

$x = \frac{-5 \pm \sqrt{2401}}{12}$

$x = \frac{-5 \pm 49}{12} = \frac{44}{12} = \frac{11}{3} = x$

$x = \frac{-54}{12} = \frac{-9}{2}$

4) $6x^2 + 2x - 48 = 0$

a = 6 b = 2 c = -48

$x = \frac{-(2) \pm \sqrt{(2)^2 - 4(6)(-48)}}{2(6)}$

$x = \frac{-2 \pm \sqrt{1156}}{12}$

$x = \frac{-2 \pm 34}{12}$

$x = \frac{-36}{12} = -3$

$x = \frac{32}{12} = \frac{8}{3}$

5) $4x^2 + 8x - 17 = 0$

a = 4 b = 8 c = -17

$x = \frac{-(8) \pm \sqrt{(8)^2 - 4(4)(-17)}}{2(4)}$

$x = \frac{-8 \pm \sqrt{336}}{8}$

$x = \frac{-8 \pm 4\sqrt{21}}{8}$

6) $3x^2 + 4x - 5 = 0$

a = 3 b = 4 c = -5

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

$x = \frac{-4 \pm \sqrt{76}}{6}$

$x = \frac{-4 \pm 2\sqrt{19}}{6}$

7) $6x^2 + 11x + 6 = 0$

a = 6 b = 11 c = 6

$$x = \frac{-(11) \pm \sqrt{(11)^2 - 4(6)(6)}}{2(6)}$$

$$x = \frac{-11 \pm \sqrt{-23}}{12}$$

$$\boxed{x = \frac{-11 \pm i\sqrt{23}}{12}}$$

8) $4x^2 + 6x + 4 = 0$

a = 4 b = 6 c = 4

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

$$x = \frac{-6 \pm \sqrt{-28}}{8}$$

$$\boxed{x = \frac{-6 \pm 2i\sqrt{7}}{8}}$$

9) $3x^2 + 3x + 7 = 0$

a = 3 b = 3 c = 7

$$x = \frac{-(3) \pm \sqrt{(3)^2 - 4(3)(7)}}{2(3)}$$

$$x = \frac{-3 \pm \sqrt{-75}}{6}$$

$$\boxed{x = \frac{-3 \pm 5i\sqrt{3}}{6}}$$

10) $2x^2 - 4x + 11 = 0$

a = 2 b = -4 c = 11

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(2)(11)}}{2(2)}$$

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

$$\boxed{x = \frac{4 \pm 6i\sqrt{2}}{4}}$$