Name: Key

Quiz Review:

Solving Quadratic Equations Algebraically

Solve the following quadratic equations using **any** appropriate method (factoring, quadratic formula, or square root)!

1. $y = x^2 - 6x + 4$

$a=1 \quad b=-6 \quad c=4$

$$x = \frac{-(-6) \pm \sqrt{(-6)^2 - 4(1)(4)}}{2(1)}$$

$$x = \frac{6 \pm \sqrt{20}}{2} = \frac{6 \pm 2\sqrt{5}}{2} = 3 \pm \sqrt{5}$$

2. $y = 2x^2 + 3x - 35$

-70

$2x^2 + 10x - 7x - 35$

$2x(x+5) - 7(x+5)$

$(2x-7)(x+5) = 0$

$2x - 7 = 0$ $\quad$ $x = 7/2$

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

3. $y = 3x^2 - 54$

$0 = 3x^2 - 54$

$\frac{54}{3} = \frac{3x^2}{3}$

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

$\pm 3\sqrt{2} = x$

4. $y = x^2 + 8x$

$x(x+8) = 0$

$x = 0$

$x + 8 = 0$

$x = -8$

5. $-x^2 - 6x = -1$

$0 = x^2 + 6x - 1$

$a=-1 \quad b=6 \quad c=-1$

$$x = \frac{-(6) \pm \sqrt{(6)^2 - 4(1)(-1)}}{2(1)}$$

$$x = \frac{-6 \pm \sqrt{40}}{2} = \frac{-6 \pm 2\sqrt{5}}{2}$$

$x = -3 \pm \sqrt{5}$

6. $(x-2)^2 + 1 = 17$

$\sqrt{(x-2)^2} = \sqrt{16}$

$x - 2 = \pm 4$

$x - 2 = -4$ $\quad$ $x = -2$

$+2 \quad +2$

$x - 2 = 4$ $\quad$ $x = 6$

$+2 \quad +2$