

Key

Solving Quadratics Quest Review

Solve each quadratic equation by factoring.

1) $x^2 - 4x - 12 = 0$
 $(x-6)(x+2) = 0$
 $x-6=0$ $x+2=0$
 $x=6$ $x=-2$

2) $10x^2 - 9x = 0$
 $x(10x-9) = 0$
 $x=0$ $10x-9=0$
 $x = 9/10$

3) $x^2 - 16 = 0$
 $(x+4)(x-4) = 0$
 $x=-4$ $x=4$

4) $15x^2 + 19x + 6 = 0$ $x = -2/3$

$x^2 + 19x + 90 = 0$
 $(x+10)(x+9) = 0$
 $(x+10/15)(x+9/15) = 0$ $x = -3/5$
 $(x+2/3)(x+3/5) = 0$

5) $x^2 - 4x - 21 = 0$
 $(x-7)(x+3) = 0$
 $x-7=0$ $x+3=0$
 $x=7$ $x=-3$

Solve each quadratic equation by using the quadratic formula.

6) $x^2 - 9x + 14 = 0$ $a=1$ $b=-9$ $c=14$
 $\frac{9 \pm \sqrt{-9^2 - 4(1)(14)}}{2(1)} = \frac{9 \pm \sqrt{81-56}}{2}$

$\frac{9 \pm 5}{2} = x$
 $x=7$
 $x=2$

10) $6x^2 - 2x - 1 = 0$ $a=6$ $b=-2$ $c=-1$
 $x = \frac{2 \pm \sqrt{-2^2 - 4(6)(-1)}}{2(6)}$

$x = \frac{2 \pm \sqrt{4+24}}{12}$

7) $x^2 - 3x - 40 = 0$
 $x = \frac{3 \pm \sqrt{-3^2 - 4(1)(-40)}}{2(1)}$

$x = \frac{3 \pm \sqrt{169}}{2}$
 $x=8$
 $x=-5$

$x = \frac{2 \pm \sqrt{28}}{12}$

8) $5x^2 - 2x + 4 = 0$
 $x = \frac{2 \pm \sqrt{-2^2 - 4(5)(4)}}{2(5)}$

$x = \frac{2 \pm 2\sqrt{7}}{12}$

9) $2x^2 + 7x = 0$
 $x = \frac{2 \pm \sqrt{-7^2 - 4(2)(0)}}{2(2)}$
 $x = \frac{2 \pm 2i\sqrt{49}}{10}$
 $x = \frac{1 \pm i\sqrt{49}}{5}$

$x = \frac{1 \pm \sqrt{7}}{6}$

$a=2$
 $b=7$
 $c=0$
 $\frac{-7 \pm \sqrt{7^2 - 4(2)(0)}}{2(2)}$
 $\frac{-7 \pm \sqrt{49}}{4} = \frac{-7 \pm 7}{4}$

$x=0$ $x = -7/2$ or -3.5

$a=1$
 $b=-3$
 $c=-40$

$a=5$
 $b=-2$
 $c=4$

76
 38
 19

28
 7
 4
 aa