

★ Online Course Evaluation as Extra Credit (bring proof of completion)

METHODS OF SOLVING QUADRATIC EQUATIONS

(1) Factoring Method.

step 1: Set the equation with zero on one side

step 2: Factor the polynomial

step 3: Set each factor to equal zero and solve.

WEBASSIGN

1.4-6 $\frac{1}{12}x^2 - x - 24 = 0$

$$\frac{12}{1}(\frac{1}{12}x^2 - x - 24) = \frac{12}{1} \cdot 0$$

$$x^2 - 12x - 288 = 0$$

$$(x+12)(x-24) = 0$$

$$x+12=0 \text{ or } x-24=0$$

$$\boxed{x = -12} \text{ or } \boxed{x = 24}$$

(2) Square Root Method

When you have a perfect square = a perfect square (or any number)

step 1: Take the square root of both sides

step 2: ALWAYS USE THE "±" SYMBOL

1.4-7 $9x^2 = 144$

$$\sqrt{9x^2} = \sqrt{144}$$

$$3x = \pm 12$$

$$\boxed{x = \pm 4}$$

→ this ± symbol means "plus or minus"

basically $12^2 = 144$ and $(-12)^2 = 144$

check $x=4 \Rightarrow 9x^2 = 9 \cdot (4)^2 = 9 \cdot 16 = 144 \checkmark$

$$x=-4 \Rightarrow 9x^2 = 9(-4)^2 = 9 \cdot 16 = 144 \checkmark$$

$$1.4-8 \quad (x-6)^2 = 36$$

$$\sqrt{(x-6)^2} = \sqrt{36}$$

$$x-6 = \pm 6$$

$$x-6 = 6 \quad \text{or} \quad x-6 = -6$$

$$\boxed{x = 12} \quad \text{or} \quad \boxed{x = 0}$$

example $(x+5)^2 = 40$

$$\sqrt{(x+5)^2} = \sqrt{40}$$

$$x+5 = \pm \sqrt{40}$$

$$x+5 = \sqrt{40} \quad \text{or} \quad x+5 = -\sqrt{40}$$

$$\boxed{x = \sqrt{40} - 5} \quad \text{or} \quad \boxed{x = -\sqrt{40} - 5}$$

← the right hand side is not a perfect square but a number, > ok