

Warm-up : Simplify the radical expressions

1.) $\sqrt{48}$

$4\sqrt{3}$

2.) $\sqrt{-49}$

$7i$

SOLVING QUADRATIC EQUATIONS using Square Root Method p. 68

no "b"

If the equation can be written in the form: $ax^2 + c = 0$

- 1) ISOLATE the SQUARED term
- 2) Take the square root of both sides (remember your +/-)
- 3) Continue Isolating the Variable, if necessary

1) $2(x-4)^2 - 1 = 17$

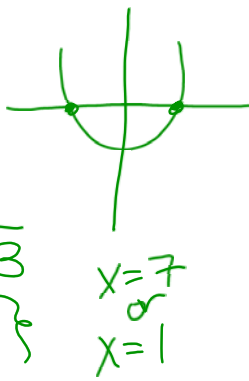
$$\frac{2(x-4)^2}{2} = \frac{18}{2}$$

$$\sqrt{(x-4)^2} = \sqrt{9}$$

$$x-4 = \pm 3$$

$$x = 4 \pm 3$$

$$x = \{7, 1\}$$



More Practice! Solve for x using the Square Root method.

p. 68

$$\begin{array}{r}
 2) \quad (x + 2)^2 - 10 = 90 \\
 \quad \quad \quad \quad \quad +10 \quad +10 \\
 \hline
 \sqrt{(x+2)^2} = \sqrt{100} \\
 x+2 = \pm 10 \\
 \quad \quad -2 \quad -2 \\
 \hline
 x = \{8, -12\}
 \end{array}$$

More Practice! Solve for x using the Square Root method.

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$$\begin{array}{r}
 3) \quad 5t^2 - 7 = 83 \\
 \quad \quad \quad \quad \quad +7 \quad +7 \\
 \hline
 \frac{5t^2}{5} = \frac{90}{5} \\
 \sqrt{t^2} = \sqrt{18} \\
 t = \pm 3\sqrt{2} \\
 t = \{-3\sqrt{2}, 3\sqrt{2}\}
 \end{array}$$

$$\begin{array}{r}
 \sqrt{18} \\
 \swarrow \searrow \\
 2 \quad 9 \\
 \underline{\quad} \\
 (3) (3)
 \end{array}$$

More Practice! Solve for x using the Square Root method.

p. 69

$$4) \quad \frac{3(x-5)^2}{3} = \frac{36}{3}$$

$$\sqrt{(x-5)^2} = \sqrt{12}$$

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

$$x = 5 \pm 2\sqrt{3}$$

$$\sqrt{12}$$

$$\begin{array}{r} 3 \\ \overline{)12} \\ \underline{9} \\ 3 \end{array}$$

You try! Solve for x using the Square Root method.

p. 69

Remember: $\sqrt{-1} = i$

$$5) \quad \frac{2(x+1)^2}{2} = \frac{-50}{2}$$

$$\sqrt{(x+1)^2} = \sqrt{-25}$$

$$x+1 = \pm 5i$$

$$x = -1 \pm 5i$$

$$\sqrt{-25}$$

$$\begin{array}{r} 5 \\ \overline{)25} \\ \underline{25} \\ 0 \end{array}$$

You try! Solve for x using the Square Root method.

p. 69

Remember: $\sqrt{-1} = i$

$$6) \quad -4(x - 8)^2 + 10 = 262$$

$$\frac{-4(x - 8)^2 + 10 = 262}{-10 \quad -10}$$

$$\frac{-4(x - 8)^2 = 252}{-4 \quad -4}$$

$$\sqrt{(x - 8)^2} = \sqrt{-63}$$

$$x - 8 = \pm 3i\sqrt{7}$$

$$x = 8 \pm 3i\sqrt{7}$$

