

$$(2\sqrt{5} - \sqrt{6})(4\sqrt{5} - 3\sqrt{6})$$

$$8\sqrt{25} - 6\sqrt{30} - 4\sqrt{30} + 3\sqrt{36}$$

$$8 \cdot 5 - 10\sqrt{30} + 3 \cdot 6$$

$$40 - 10\sqrt{30} + 18$$

$$58 - 10\sqrt{30}$$

# 11.3 Solving Radical Equations

get radicals alone  
 $\sqrt{\quad}$

$$\text{Ex: } \sqrt{x} - 3 = 4$$

$$\begin{array}{r} \phantom{\sqrt{x}} - 3 \\ +3 \phantom{-3} \\ \hline \sqrt{x} = 7 \end{array}$$

$$(\sqrt{x})^2 = (7)^2$$

$$\boxed{x = 49}$$

$$\checkmark: \sqrt{49} - 3 = 4$$

$$7 - 3 = 4 \checkmark$$

$$\text{Ex: } (\sqrt{x-3})^2 = (4)^2$$

$$x - 3 = 16$$

$$\begin{array}{r} +3 \phantom{-3} \\ +3 \phantom{-3} \\ \hline x = 19 \end{array}$$

$$\checkmark: \sqrt{19-3} = 4$$

$$\sqrt{16} = 4 \checkmark$$

$$\text{Ex: } (\sqrt{3n-2})^2 = (\sqrt{n+6})^2$$

$$3n-2 = n+6$$

$$3n = n+8 \quad \sqrt{\quad} : \sqrt{12-2} = \sqrt{10}$$

$$2n = 8$$

$$n = 4$$

$$\sqrt{10} = \sqrt{10}$$

✓

$$\text{Ex: } \sqrt{2x+6} = 4$$

$$(\sqrt{2x})^2 = (-2)^2 \quad \sqrt{\quad} : \sqrt{4} + 6 = 4$$

$$2x = 4$$

$$2 + 6 = 4$$

$x = 2$  No Solution

X

$$\text{Ex: } (x)^2 = (\sqrt{x+6})^2$$

needs to be pos.

$$\boxed{x^2} = x+6$$

$$-x-6 \quad -x-6$$

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

$$(x-3)(x+2) = 0$$

$$\begin{array}{r} -6x^2 \\ -3x \quad 2x \\ \hline -x \end{array}$$

$$\boxed{x=3} - 2$$

$$x-3=0$$

$$x=3$$

$$x+2=0$$

$$x=-2$$

$$\sqrt{\quad} : 3 = \sqrt{3+6}$$

$$-2 = \sqrt{-2+6}$$

$$3 = \sqrt{9} \checkmark$$

$$-2 = \sqrt{4}$$

X

Pg 632  
#1-27 odd