

①  $\sqrt{2x} = 6$  DRILL

$\frac{2x}{2} = \frac{36}{2}$

$x = 18$  Solution

$\sqrt{2(18)} = 6$   
 $\sqrt{36} = 6$   
 $6 = 6 \checkmark$

②  $\sqrt{3x-1} + 2 = 4$

$\sqrt{3x-1} = 2$

$\sqrt{3(\frac{5}{3})-1} + 2 = 4$

$\sqrt{5-1} + 2 = 4$

$\sqrt{4} + 2 = 4$

$2 + 2 = 4 \checkmark$

$\frac{3x}{3} = \frac{5}{3}$

$x = \frac{5}{3}$  Solution

$\sqrt{3x-1} = 2$

$3x - x = 4$

$\frac{+x}{+1} \quad \frac{+1}{+1}$

$3x = 5$

Ex:  
Divide  
by 3 =

$$\frac{3\sqrt{2x+4}}{3} = \frac{15}{3}$$

$$\sqrt{2x+4} = 5$$

$$\begin{array}{r} 2x + 4 = 25 \\ -4 \quad -4 \\ \hline 2x = 21 \\ \frac{2x}{2} = \frac{21}{2} \end{array}$$

Solution

$$x = \frac{21}{2}$$

Check:  $3\sqrt{2\left(\frac{21}{2}\right)+4} = 15$

$$3\sqrt{21+4} = 15$$

$$3\sqrt{25} = 15$$

$$3(5) = 15 \checkmark$$

$$15 = 15 \checkmark$$

$$\sqrt[3]{2x+8} = 4$$

$$2x + 8 = 64$$
$$-8 \quad -8$$

$$\frac{2x}{2} = \frac{56}{2}$$

$$x = 28$$

Solution

Check:

$$3\sqrt[3]{2(28)+8} = 4$$

$$3\sqrt[3]{56+8} = 4$$

$$3\sqrt[3]{64} = 4$$

$$4 = 4 \quad \checkmark$$

$$4^3 = 64$$

$$\frac{4 \cdot \sqrt{2x+6}}{4} = \frac{-16}{4}$$

$$\frac{4x}{4} = \frac{20}{4}$$
$$x = 5$$

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

Check

$$4\sqrt{2(5)+6} = -16$$

No  
Solution

$$2x + 6 = 16$$
$$\quad \quad -6 \quad \quad -6$$

$$\frac{2x}{2} = \frac{10}{2}$$

$$x = 5$$

Extraneous  
Solution

$$4\sqrt{10+6} = -16$$

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

$$4(4) = -16$$

$$16 \neq -16$$

NOT TRUE