

Warm - Up

$$\frac{2}{3}x - 9 = -11$$

+9 +9

$$\frac{3}{2} \cdot \frac{2}{3}x = \frac{-2}{1} \cdot \frac{3}{2}$$

$$x = -3$$

$$\text{Check: } \frac{2}{3}x - 9 = -11$$

$$\frac{3}{2} \cdot \frac{-3}{1} - 9 = -11$$

$$\frac{3}{2} \cdot \frac{-3}{2} - 9 = -11$$

$$-\frac{9}{2} - 9 = -11$$

$$-11 = -11$$

$$\frac{1}{5} \left(\frac{2}{3}x - 3 \right) = \frac{4}{5}$$

$$\frac{2}{3}x \cdot 3 = 4$$

+3 +3

$$\frac{3}{2} \cdot \frac{2}{3}x = \frac{7}{1} \cdot \frac{3}{2}$$

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

$$\text{ck: } \frac{1}{5} \left(\frac{2}{3}x - 3 \right) = \frac{4}{5}$$

$$\frac{1}{5} \left(\frac{2}{3} \left(\frac{21}{2} \right) - 3 \right) = \frac{4}{5}$$

$$\frac{1}{5} (7 - 3) = \frac{4}{5}$$

$$\frac{1}{5} (4) = \frac{4}{5}$$

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

Solving square root and cube root equations

$$\sqrt{64} = 8$$

$$\sqrt{36} = 6$$

$$\sqrt{-36} = \text{No Solu}$$

None

$$\sqrt{x^2} = \sqrt{25}$$

$$x = 5$$

$$\sqrt{x^2} = \sqrt{4}$$

$$x = 2$$

$$\sqrt{x^2} = \sqrt{-81}$$

$$x = \text{none}$$

$$4x^2 + 6 = 54$$

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

$$\frac{4x^2}{4} = \frac{48}{4}$$

$$\sqrt{x^2} = \sqrt{12}$$

$$x \approx 3.45$$

$$2x^2 - 4 = 28$$

$$\quad +4 \quad +4$$

$$\frac{2x^2}{2} = \frac{32}{2}$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x = 4$$

$$\sqrt[3]{27} = 3$$

$$4: 4 \cdot 4 \cdot 4 = 64$$

$$5: 5 \cdot 5 \cdot 5 = 125$$

$$1: 1 \cdot 1 \cdot 1 = 1$$

$$6: 6 \cdot 6 \cdot 6 = 216$$

$$9: 9 \cdot 9 \cdot 9 = 729$$

$$2: 2 \cdot 2 \cdot 2 = 8$$

$$7: 7 \cdot 7 \cdot 7 = 343$$

$$10: 10 \cdot 10 \cdot 10 = 1000$$

$$3: 3 \cdot 3 \cdot 3 = 27$$

$$8: 8 \cdot 8 \cdot 8 = 512$$

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

$$\sqrt[3]{x^3} = \sqrt[3]{125}$$
$$x = 5$$

You try!

$$x^2 - 9 = 72$$

$$\begin{array}{r} +9 \quad +9 \\ \sqrt{x^2} = \sqrt{81} \\ x = 9 \end{array}$$

$$-2x^2 = -128$$

$$\begin{array}{r} -2 \quad -2 \\ \sqrt{x^2} = \sqrt{64} \\ x = 8 \end{array}$$

$$\sqrt[3]{x^3} = \sqrt[3]{64}$$

$$x = 4$$

$$\frac{2x^3}{2} = \frac{1,458}{2}$$

$$\sqrt[3]{x^3} = \sqrt[3]{729}$$

$$x = 9$$