Key Lesson Marker

In general, $\sqrt[3]{x^3} = x$.

Check Up

1. Solve for the unknown variable in the following equations.

   a. $\frac{x}{2} = 16$

   b. $\frac{5}{6}r^2 = 30, r \geq 0$

   c. $\frac{5}{2}r^3 = 67.5$

Compare your answers.

1. Solve for the unknown variable in the following equations.

a. $\frac{x}{2} = 16$

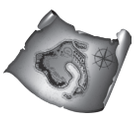
$$\frac{x}{2} \cdot 2 = 16 \cdot 2$$
$$x = 32$$

b. $\frac{5}{6}r^2 = 30, r \geq 0$

$$\left(\frac{5}{\cancel{6}} \cdot \cancel{6}\right)r^2 = 30 \cdot 6$$
$$5r^2 = 180$$
$$\frac{\cancel{5}}{\cancel{5}}r^2 = \frac{180}{5}$$
$$r^2 = 36$$
$$\sqrt{r^2} = \sqrt{36}$$
$$r = 6$$

c. $\frac{5}{2}r^3 = 67.5$

$$\left(\frac{5}{\cancel{2}} \cdot \cancel{2}\right)r^3 = 67.5 \cdot 2$$
$$5r^3 = 135$$
$$\frac{\cancel{5}}{\cancel{5}}r^3 = \frac{135}{5}$$
$$r^3 = 27$$
$$\sqrt[3]{r^3} = \sqrt[3]{27}$$
$$r = 3$$



Explore the Lesson

B. Volume of Right Prisms and Right Cylinders

Volume is expressed in cubic units, such as cubic inches or cubic centimetres, because three measurements make up the volume on an object. These measurements usually involve the width, length, and height of an object, although they may be labelled differently.

Volume
the amount of space an object takes up

For right cylinders and right prisms, volume is determined by multiplying the area of the object's base (which needs to be calculated) by the height of the object.