

Volume Practice Problems

1. volume of a sphere if $r = 11$ cm

2. length of a triangular prism if
 $b = 17$ in and height = 8 in and
volume = 748 in³

3. volume of a right circular
cylinder if $r = 4$ m and $h = \frac{13}{5}$ m

4. base of a right square
pyramid if $h = \frac{36}{11}$ in. and $V = 12$ in.³

5. width of a rectangular
prism if $V = 17,640$ ft³ and
 $l = 21$ ft. and $h = 36$ ft.

6. volume of a triangular prism if
 $b = \frac{5}{2}$ m, $h = \frac{3}{4}$ m, and $l = \frac{16}{9}$ m

7. volume of a right circular
cylinder if $r = 5$ m and $h = 7$ m.

8. radius of a sphere is volume is
 24 ft³

Volume Practice Problems.

1. volume of a sphere if $r = 11$ cm

$$V = \frac{4}{3} \pi (11)^3$$

$$V = \frac{4}{3} \pi (1331)$$

$$V = \frac{5324 \pi}{3} \text{ cm}^3$$

2. length of a triangular prism if
 $b = 17$ in and height = 8 in and
volume = 748 in^3

$$748 = \frac{1}{2} (17)(8) l$$

$$748 = 68l$$

$$l = 11 \text{ in}$$

3. volume of a right circular
cylinder in $r = 4$ m and $h = \frac{13}{3}$ m

$$V = \pi (4)^2 \frac{13}{3}$$

$$V = \pi (64) \frac{13}{3}$$

$$V = \frac{832 \pi}{3} \text{ m}^3$$

4. base of a right square
pyramid if $h = \frac{36}{11}$ in. and $V = 12 \text{ in}^3$

$$12 = \frac{1}{3} \left(\frac{36}{11} \right) b$$

$$12 = \frac{12}{11} b$$

$$b = 11 \text{ in}$$

5. width of a rectangular
prism if $V = 17,640 \text{ ft}^3$ and
 $l = 21$ ft. and $h = 36$ ft.

$$17,640 = (21)(36)w$$

$$17,640 = 756w$$

$$w = \frac{70}{3} \text{ ft}$$

6. volume of a triangular prism if
 $b = \frac{5}{2}$ m, $h = \frac{3}{4}$ m, and $l = \frac{16}{9}$ m

$$V = \frac{1}{2} \left(\frac{5}{2} \right) \left(\frac{3}{4} \right) \left(\frac{16}{9} \right)$$

$$V = \left(\frac{5}{4} \right) \left(\frac{1}{3} \right)$$

$$V = \frac{5}{3} \text{ m}^3$$

7. volume of a right circular
cylinder if $r = 5$ m and $h = 7$ m.

$$V = \pi r^2 h$$

$$V = \pi (25)^2 (7)$$

$$V = 175 \pi \text{ m}^3$$

8. radius of a sphere is volume is
 24 ft^3

$$24 = \frac{4}{3} \pi r^3$$

$$18 = \pi r^3$$

$$\frac{18}{\pi} = r^3$$

$$r = \sqrt[3]{\frac{18}{\pi}}$$

Volume

rectangular prism $V = lhw$

sphere $V = \frac{4}{3} \pi r^3$

right square pyramid $V = \frac{1}{3} bh$

triangular prism $V = \frac{1}{2} bhl$

right circular cone $V = \pi r^2 \frac{h}{3}$

right circular cylinder $V = \pi r^2 h$

1. $h = 6 \text{ cm}$
 $w = 11 \text{ cm}$
 $l = 7 \text{ cm}$

$$V = lhw$$
$$(6)(11)(7)$$

$$V = 462 \text{ cm}^3$$

2. $r = 6 \text{ in}$

$$V = \frac{4}{3} \pi (6)^3$$
$$V = \frac{4}{3} \pi (216)$$

$$V = 288 \pi \text{ in}^3$$

3. $B = 6 \text{ m}$ $h = 10 \text{ m}$

$$V = \frac{1}{2} (6)(10)$$

$$V = 20 \text{ m}^3$$

4. $b = 7 \text{ m}$
 $h = 4 \text{ in}$
 $l = 8 \text{ m}$

$$V = \frac{1}{2} (7)(4)(8)$$

$$V = 112 \text{ m}^3$$

5. $h = 14 \text{ cm}$
 $r = 9 \text{ cm}$

$$V = \pi (9)^2 \left(\frac{14}{3} \right)$$

$$V = \pi (81) \left(\frac{14}{3} \right)$$

$$V = 126 \pi \text{ cm}^3$$

6. $r = 2 \text{ ft}$
 $h = 13 \text{ ft}$

$$V = \pi (2)^2 (13)$$

$$V = \pi (4)(13)$$

$$V = 52 \pi \text{ ft}^3$$