

9.6 Volume: Prisms and Cylinders

Base (7x5)
height (5)

$V = 35(5)$
 $= 175u^3$

$V = Bh$
Volume = Area of the Base \cdot height

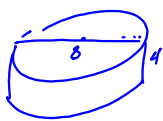
$B = \frac{1}{2}bh$
 $B = \frac{1}{2}(10 \cdot 5)$
 $B = 25$
 $V = 25 \cdot 3 = 75m^3$

	Area
Rectangle	$l \cdot w$
Square	s^2
Triangle	$\frac{1}{2}bh$
Trapezoid	$\frac{1}{2}(b_1 + b_2)h$

Cylinders are Prisms

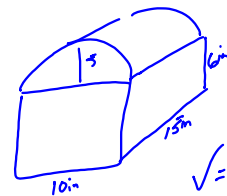
$V = B \cdot h$
Base is a circle
so we input formula
Area of circle πr^2
 $V = \pi r^2 h$

How many 6in can fit into a can that is 4in in height and has a diameter of 8in



$V = \pi r^2 h$
 $V = \pi (4)^2 \cdot 4$
 $V = 64\pi \approx 201in^3$

Regions



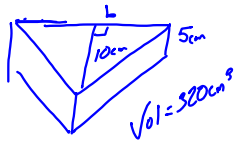
$Vol = \pi (5)^2 \cdot 15$
 $Vol = 375\pi \approx 1177.5$
 $\approx 589 \frac{1}{2}$

Rectangular Prism
 $V = (10 \cdot 15) \cdot 6$
 $V = 750in^3$

$V = 589 + 750$
 $V = 1339in^3$

Working backwards

Given a volume
find the missing dimension



$$V = \frac{1}{2} bh \cdot h$$
$$320 = \frac{1}{2} \cdot b \cdot 10 \cdot 5$$
$$\frac{320}{25} = \frac{25b}{25}$$
$$12.8 = b$$