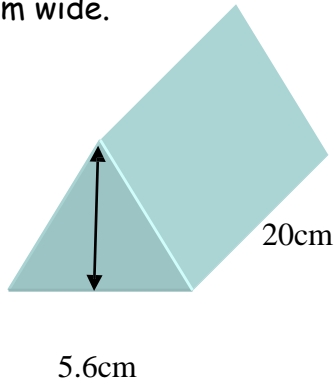


Date: _____

7.4 Notes Solving Problems Involving Prisms and Cylinders

Toblerone Chocolate bars are sold in packages that are triangular prisms. Each bar measures 5.6cm along its base, is 5cm high and 20 cm long. Joe is going to stack the bars to make a triangular prism, but it must fit on a countertop that is only 50cm wide.



$$50 \div 5.6 = 8.92$$
$$\approx 8 \text{ bars}$$

How many bars will fit in the shape?

1 row - 8 bars

2, 3 row - 7+7 bars

4, 5 row - 6+6 bars

6, 7 row - 5+5 bars

∴ Total 64 bars



What is the total volume of the display?

Vol. of 1 bar

$$V = (l \times w \div 2) \times h$$
$$= (5.6 \times 5 \div 2) \times 20$$
$$= 280 \text{ cm}^3$$

Vol. of
64 bars
(display)

$$280 \times 64$$
$$= 17920 \text{ cm}^3$$

A section of pipe has an inner diameter of 12cm and an outer diameter of 15cm.
What is the volume of a pipe that measures 5m long?

↓
how much it can contain.

$$\begin{aligned}V &= \pi r^2 \times h \\ &= \pi \times 6 \times 6 \times 500 \\ &= 56548.6 \text{ cm}^3\end{aligned}$$



Fred's truck has a bed that measures 2.5m x 1.2m x 2m.
He has 105 m³ of garbage he needs to haul to the dump.
If each trip costs him \$7, how much will it cost him to haul
away all of his garbage?



Vol. of a bed of
a truck

$$\begin{aligned}V &= 2.5 \times 1.2 \times 2 \\ &= 6 \text{ m}^3\end{aligned}$$

Find how many trips

$$105 \div 6 = 17.5 \text{ trips} \Rightarrow 18 \text{ trips}$$

$$18 \times 7 = \$126$$

