

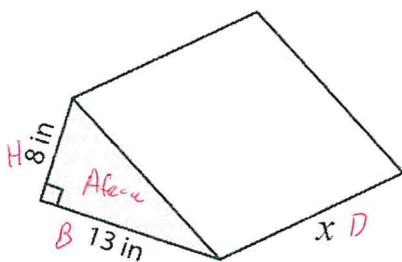
Grade 8 Math – Finding the Missing Measure 2

Name: _____ Class: _____ Date: _____

You should be able to manipulate the formula or just substitute into the known formula to solve for the missing measure. Try the following.

1) Volume = 884 in^3

What is the missing measure x?



$$V = A_{\text{face}} \times D$$

$$884 \text{ in}^3 = A_{\text{face}} \times x$$

$$\frac{884 \text{ in}^3}{52 \text{ in}^2} = \frac{52 \text{ in}^2 \times x}{52 \text{ in}^2}$$

$$17 \text{ in} = x$$

$$A_{\text{face}} = \frac{B \times H}{2}$$

$$= \frac{13 \text{ in} \times 8 \text{ in}}{2}$$

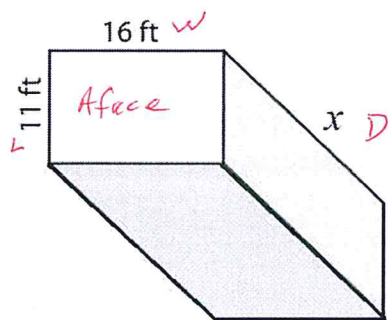
$$= \frac{104 \text{ in}^2}{2}$$

$$= 52 \text{ in}^2$$

$\therefore x = 17 \text{ in}$

2) Volume = $3,696 \text{ ft}^3$

What is the missing measure x?



$$V = A_{\text{face}} \times D$$

$$3696 \text{ ft}^3 = 176 \text{ ft}^2 \times x$$

$$\frac{3696 \text{ ft}^3}{176 \text{ ft}^2} = \frac{176 \text{ ft}^2 \times x}{176 \text{ ft}^2}$$

$$21 \text{ ft} = x$$

$$A_{\text{face}} = L \times W$$

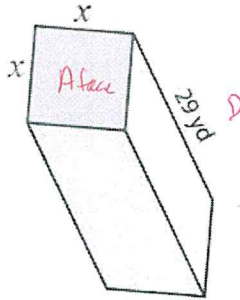
$$= 11 \text{ ft} \times 16 \text{ ft}$$

$$= 176 \text{ ft}^2$$

$\therefore x = 21 \text{ ft}$

3) Volume = $2,900 \text{ yd}^3$

What is the missing measure x ?



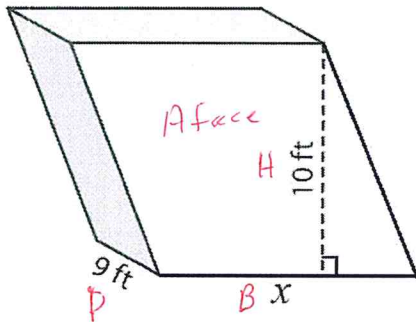
$$\begin{aligned} A_{\text{face}} &= x^2 \\ 100 \text{ yd}^2 &= x^2 \\ \sqrt{100 \text{ yd}^2} &= x \\ 10 \text{ yd} &= x \end{aligned}$$

$$\begin{aligned} V &= A_{\text{face}} \times D \\ \frac{2900 \text{ yd}^3}{29 \text{ yd}} &= \frac{A_{\text{face}} \times 29 \text{ yd}}{29 \text{ yd}} \\ 100 \text{ yd}^2 &= A_{\text{face}} \end{aligned}$$

$\therefore$ The missing measure is 10 yd .

4. Volume = $1,260 \text{ ft}^3$

What is the missing measure x ?



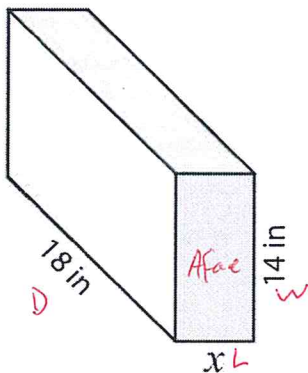
$$\begin{aligned} A_{\text{face}} &= B \times H \\ \frac{140 \text{ ft}^2}{10 \text{ ft}} &= \frac{x \times 10 \text{ ft}}{10 \text{ ft}} \\ 14 \text{ ft} &= x \end{aligned}$$

$$\begin{aligned} V &= A_{\text{face}} \times D \\ \frac{1260 \text{ ft}^3}{9 \text{ ft}} &= \frac{A_{\text{face}} \times 9 \text{ ft}}{9 \text{ ft}} \\ 140 \text{ ft}^2 &= A_{\text{face}} \end{aligned}$$

$\therefore$ The missing measure is 14 ft .

5. Volume = $1,512 \text{ in}^3$

What is the missing measure?



$$\begin{aligned} A_{\text{face}} &= L \times W \\ \frac{84 \text{ in}^2}{14 \text{ in}} &= \frac{x \times 14 \text{ in}}{14 \text{ in}} \\ 6 \text{ in} &= x \end{aligned}$$

$$\begin{aligned} V &= A_{\text{face}} \times D \\ \frac{1512 \text{ in}^3}{18 \text{ in}} &= \frac{A_{\text{face}} \times 18 \text{ in}}{18 \text{ in}} \\ 84 \text{ in}^2 &= A_{\text{face}} \end{aligned}$$

$\therefore$ The missing measure is 6 in .