

1.4 Rewriting Equations & Formulas

Example 1: Solve for h.

Area of a Triangle: $A = \frac{1}{2}bh$

$$\frac{2A}{b} = \frac{bh}{b}$$

$$\frac{2A}{b} = h$$

Example 2: Solve for w.

Perimeter of a Rectangle: $P = 2l + 2w$

$$\frac{P - 2l}{2} = \frac{2w}{2}$$

$$\frac{P - 2l}{2} = w$$

Example 3: Solve for r .

Simple Interest Formula: $I = Prt$

$$\frac{I}{Pt} = r$$

If the interest earned is $\$400$, the principal is $\$2000$, and the time is 5 years, what is the rate?

$$\frac{400}{2000 \cdot 5} = r$$

want as a %

$$\frac{1}{25} = r$$

$$.04 = r$$

$$\boxed{4\% = r}$$

Example 4: Solve for h .

Volume of a Cylinder: $V = \pi r^2 h$

$$\frac{V}{\pi r^2} = h$$

If the volume is 1848 in^3 and the radius is 14 inches, what is the height of the cylinder?

(Hint: Use $\frac{22}{7}$ for π .)

$$\frac{1848}{\frac{22}{7} \cdot 14^2} = h$$

$$\boxed{3 \text{ in} = h}$$

Example 5: Solve for h.

Volume of a Cone: $V = \frac{1}{3} \pi r^2 h$

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

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

If the volume is 54 m^3 and the radius is 4 meters ,
what is the height of the cylinder to the nearest
tenth?

(Hint: Use 3.14 for π .)

$$\frac{3 \cdot 54}{\pi \cdot 4^2} = h \approx 3.2 \text{ m}$$