

Lesson 8: Rearranging Formulas

Example: Solve $V = \frac{1}{3}\pi r^2 h$ for r if $V = 100$, $h = 10$

$$3(100) = \frac{3}{3}\pi r^2 (10)$$

$$\frac{300}{10\pi} = \frac{10\pi r^2}{10\pi}$$

$$\sqrt{\frac{30}{\pi}} = \sqrt{r^2}$$

$$\sqrt{\frac{30}{\pi}} = r$$

Example: Solve $V = \frac{1}{3}\pi r^2 h$ for r

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

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

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

$$\sqrt{\frac{3V}{\pi h}} = r$$

Example: Solve $A = \frac{h(a+b)}{2}$ for a.

$$A = \frac{h(a+b)}{2}$$

$$2A = \frac{ha + hb}{2}$$

$$2A = ha + hb$$

$$\frac{2A - hb}{h} = \frac{ha}{h}$$

$$\frac{2A - hb}{h} = a$$

Example: Solve $A = \frac{h(a+b)}{2}$ for h

$$\frac{2A}{a+b} = \frac{h(a+b)}{a+b}$$

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