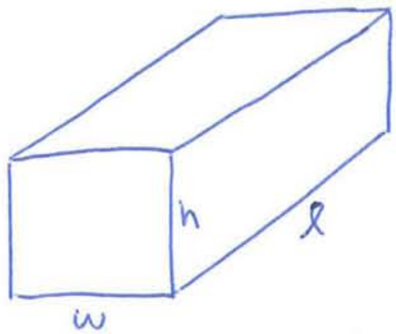
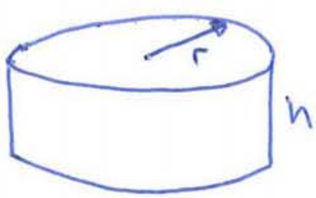
Solve for the variable “h” in the following equations.



$V = whl$

$A = 2wh + 2wl + 2hl$

Solve for the variable “h” in the following equations.



$V = \pi r^2 h$

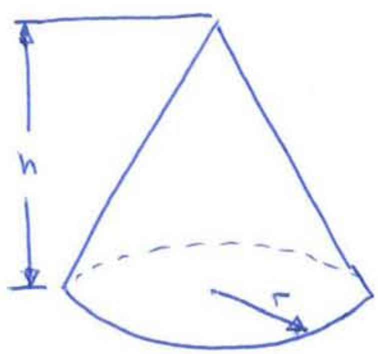
$A = 2\pi r^2 + 2\pi r h$

Solve for the variable “r” in the following equations.

$$V = \frac{4}{3}\pi r^3$$

$$A = 4\pi r^2$$

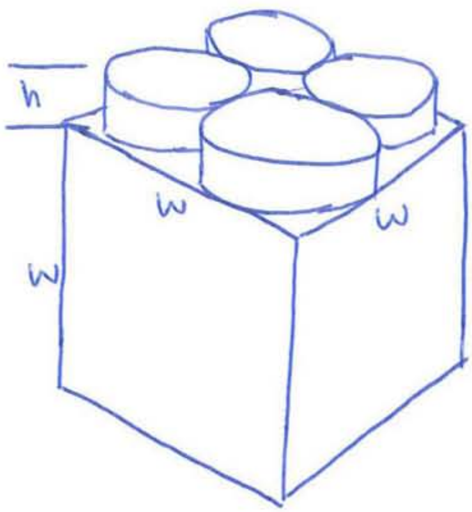
Solve for the variable “h” in the following equations.



$$V = \frac{1}{3}\pi r^2 h$$

$$A = \pi r^2 + \pi r\sqrt{h^2 + r^2}$$

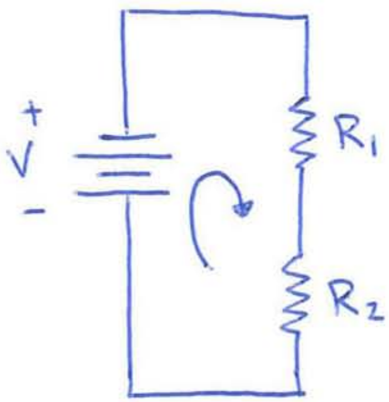
Solve for the variable “h” in the following equations.



$$V = w^3 + 4\left(\pi\left(\frac{w}{4}\right)^2 h\right)$$

$$A = 6w^2 + 4\pi\left(\frac{w}{2}\right)^2 + 4\left(2\pi\left(\frac{w}{2}\right)h\right)$$

Solve for the variable "V_2" in the last equation.



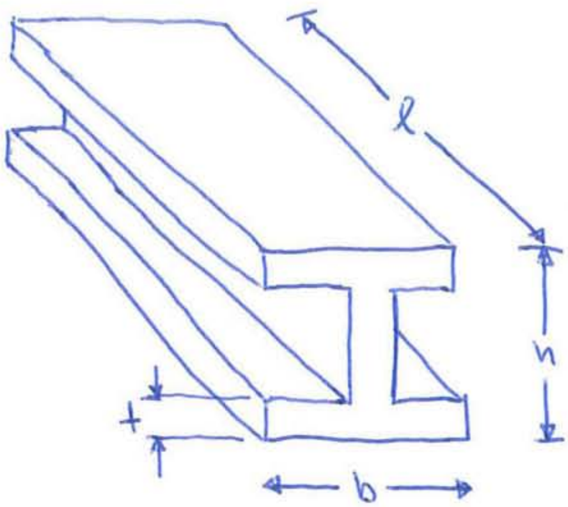
$$+V - IR_1 - IR_2 = 0 \qquad (1)$$

$$V_2 = IR_2 \qquad (2)$$

sub (2) into (1)

$$V - \left(\frac{V_2}{R_2}\right)R_1 - \left(\frac{V_2}{R_2}\right)R_2 = 0$$

Solve for the variable "h" in the following equations.



$$V = hb\ell - 2(h-2t)\left(\frac{b}{2} - \frac{t}{2}\right)\ell$$

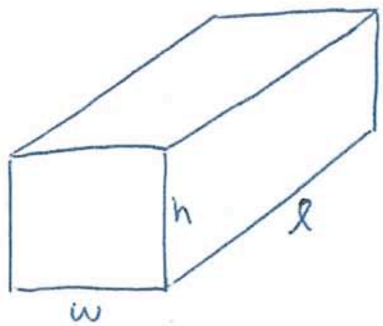
$$A = 2b\ell + 2h\ell + 4bt + 2(h-2t) +$$

$$I_{xx} = \frac{bh^3}{12} - \frac{(b-t)c^3}{12}$$

Practice makes prefect

Solve

Solve for the variable "h" in the following equations.



$V = wh\ell$ (1)

$A = 2wh + 2w\ell + 2h\ell$ (2)

equ. (1)

$$V = wh\ell$$

$$\boxed{h = \frac{V}{w\ell}}$$

equ. (2)

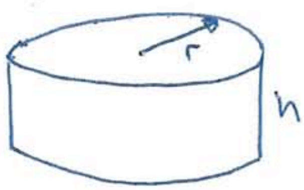
$$A = 2wh + 2w\ell + 2h\ell$$

$$2wh + 2h\ell = A - 2w\ell$$

$$h(2w + 2\ell) = A - 2w\ell$$

$$\boxed{h = \frac{A - 2w\ell}{2w + 2\ell}}$$

Solve for the variable "h" in the following equations.



$V = \pi r^2 h$ (1)

$A = 2\pi r^2 + 2\pi r h$ (2)

equ. (1)

$$V = \pi r^2 h$$

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

equ. (2)

$$A = 2\pi r^2 + 2\pi r h$$

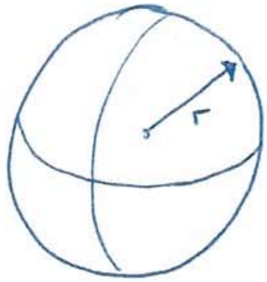
$$A - 2\pi r^2 = 2\pi r h$$

$$\boxed{h = \frac{A - 2\pi r^2}{2\pi r}}$$

Practice makes prefect

Solve

Solve for the variable "r" in the following equations.



$$V = \frac{4}{3}\pi r^3 \qquad (1)$$

$$A = 4\pi r^2 \qquad (2)$$

equ. (1)

$$V = \frac{4}{3}\pi r^3$$

$$3V = 4\pi r^3$$

$$\frac{3V}{4\pi} = r^3$$

$$\boxed{r = \sqrt[3]{\frac{3V}{4\pi}}}$$

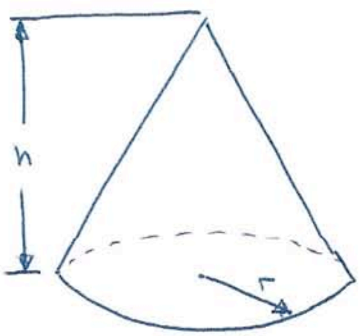
equ. (2)

$$A = 4\pi r^2$$

$$\frac{A}{4\pi} = r^2$$

$$\boxed{r = \sqrt{\frac{A}{4\pi}}}$$

Solve for the variable "h" in the following equations.



$$V = \frac{1}{3}\pi r^2 h \qquad (1)$$

$$A = \pi r^2 + \pi r\sqrt{h^2 + r^2} \qquad (2)$$

equ. (1)

$$V = \frac{1}{3}\pi r^2 h$$

$$3V = \pi r^2 h$$

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

equ (2)

$$A = \pi r^2 + \pi r\sqrt{h^2 + r^2}$$

$$A - \pi r^2 = \pi r\sqrt{h^2 + r^2}$$

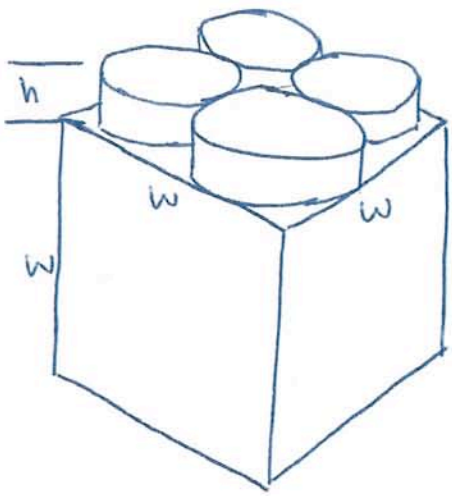
$$\left(\frac{A - \pi r^2}{\pi r}\right)^2 = \left(\sqrt{h^2 + r^2}\right)^2$$

$$h^2 + r^2 = \left(\frac{A - \pi r^2}{\pi r}\right)^2$$

$$h^2 = \left(\frac{A - \pi r^2}{\pi r}\right)^2 - r^2$$

$$\boxed{h = \sqrt{\left(\frac{A - \pi r^2}{\pi r}\right)^2 - r^2}}$$

Solve for the variable "h" in the following equations.



$$V = w^3 + 4\left(\pi\left(\frac{w}{4}\right)^2 h\right) \quad (1)$$

$$A = 6w^2 + 4\pi\left(\frac{w}{2}\right)^2 + 4\left(2\pi\left(\frac{w}{2}\right)h\right) \quad (2)$$

equ (1)

$$V = w^3 + 4\left(\pi\left(\frac{w}{4}\right)^2 h\right) = w^3 + 4\pi\frac{w^2}{16}h = w^3 + \frac{\pi w^2 h}{4}$$

$$V = w^3 + \frac{\pi w^2 h}{4}$$

$$V - w^3 = \frac{\pi w^2 h}{4}$$

$$\boxed{h = \frac{4(V - w^3)}{\pi w^2}}$$

equ. (2)

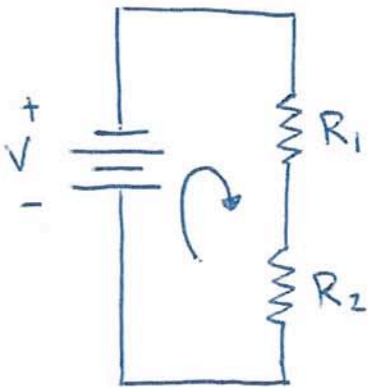
$$A = 6w^2 + 4\pi\left(\frac{w}{2}\right)^2 + 4\left(2\pi\left(\frac{w}{2}\right)h\right) = 6w^2 + \cancel{4}\pi\frac{w^2}{\cancel{4}} + 8\pi\frac{w}{2}h$$

$$A = 6w^2 + \pi w^2 + 4\pi w h$$

$$A - 6w^2 - \pi w^2 = 4\pi w h$$

$$\boxed{h = \frac{A - 6w^2 - \pi w^2}{4\pi w}}$$

Solve for the variable "V_2" in the last equation.



$$+V - IR_1 - IR_2 = 0 \qquad (1)$$

$$V_2 = IR_2 \qquad (2)$$

sub (2) into (1)

$$V - \left(\frac{V_2}{R_2}\right)R_1 - \left(\frac{V_2}{R_2}\right)R_2 = 0$$

$$V - \left(\frac{V_2}{R_2}\right)R_1 - \left(\frac{V_2}{R_2}\right)R_2 = 0$$

$$V - V_2\left(\frac{R_1}{R_2}\right) - V_2 = 0$$

$$V = V_2\left(\frac{R_1}{R_2}\right) + V_2$$

$$V = V_2\left(\frac{R_1}{R_2} + 1\right)$$

$$\boxed{V_2 = \frac{V}{1 + \frac{R_1}{R_2}}}$$

more

$$V_2 = \frac{V}{1 + \frac{R_1}{R_2}}$$

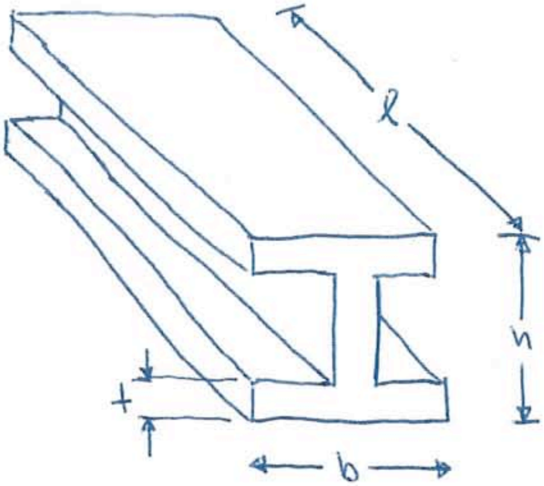
$$= \frac{V}{\frac{R_2}{R_2} + \frac{R_1}{R_2}}$$

$$= \frac{V}{\frac{R_2 + R_1}{R_2}}$$

$$= \frac{VR_2}{R_2 + R_1}$$

$$\boxed{V_2 = V\,\frac{R_2}{R_1 + R_2}}$$

Solve for the variable "h" in the following equations.



$$V = hb\ell - 2(h-2t)\left(\frac{b}{2}-\frac{t}{2}\right)\ell \qquad (1)$$

$$A = 2b\ell + 2h\ell + 4bt + 2(h-2t)t \qquad (2)$$

$$I_{xx} = \frac{bh^3}{12} - \frac{(b-t)c^3}{12} \qquad (3)$$

equ. (1)

$$V = hb\ell - 2(h-2t)\left(\frac{b}{2}-\frac{t}{2}\right)\ell = hb\ell - (2h\ell - 4t\ell)\left(\frac{b}{2}-\frac{t}{2}\right)$$

$$V = hb\ell - \left[\cancel{2}h\ell\frac{b}{\cancel{2}} - \cancel{2}h\ell\frac{t}{\cancel{2}} - \cancel{4}^{2}t\ell\frac{b}{\cancel{2}} + \cancel{4}^{2}t\ell\frac{t}{\cancel{2}}\right]$$

$$V = \cancel{hb\ell} - \cancel{h\ell b} + h\ell t + 2t\ell b - 2t^2\ell$$

$$V = h\ell t + 2tb\ell - 2t^2\ell$$

$$V - 2tb\ell + 2t^2\ell = h\ell t$$

$$\boxed{h = \frac{V - 2tb\ell + t^2\ell}{\ell t}}$$

equ. (2)

$$A = 2bl + 2hl + 4bt + 2(h-2t)t$$

$$A = 2bl + 2hl + 4bt + 2ht - 4t^2$$

$$A - 2bl - 4bt + 4t^2 = 2hl + 2ht = h(2l + 2t)$$

$$\boxed{h = \frac{A - 2bl - 4bt + 4t^2}{2l + 2t}}$$

equ. (3)

$$I_{xx} = \frac{bh^3}{12} - \frac{(b-t)c^3}{12}$$

$$I_{xx} + \frac{(b-t)c^3}{12} = \frac{bh^3}{12}$$

$$12I_{xx} + (b-t)c^3 = bh^3$$

$$\boxed{h = \sqrt[3]{\frac{12I_{xx} + (b-t)c^3}{b}}}$$