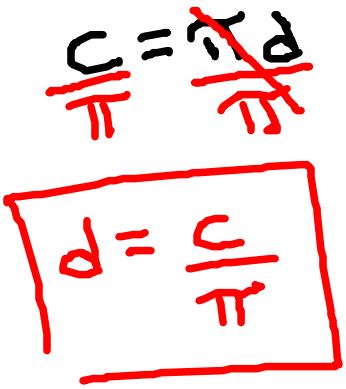
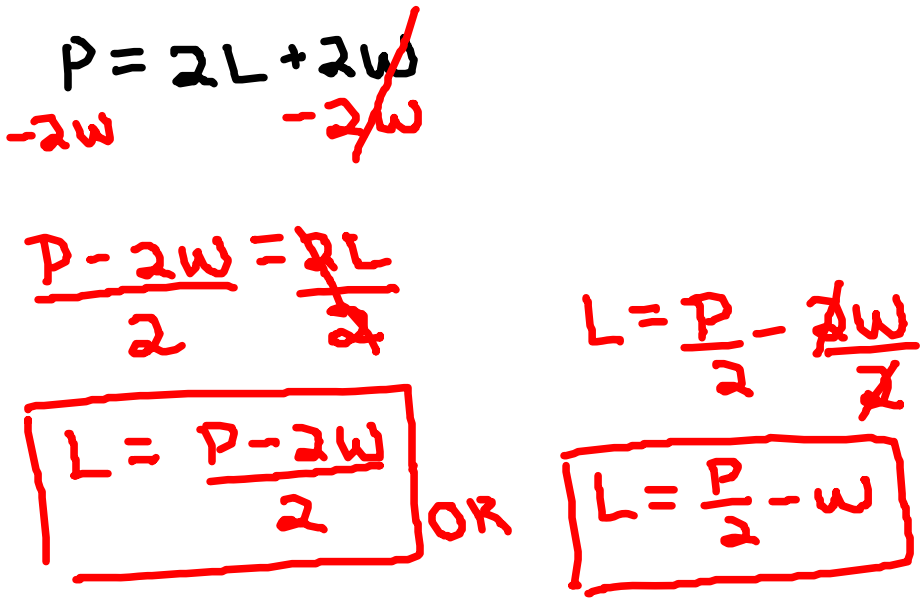
Solving for Variables in Equations With More Than One Variable

Directions: Solve each equation for the indicated variable.

1. $C = \pi d$, for d



2. $P = 2l + 2w$, for l



3. $y = mx + b$, for m

$y = mx + b$

$-b \quad -b$

$\frac{y-b}{x} = \frac{mx}{x}$

$m = \frac{y-b}{x}$ OR $m = \frac{y}{x} - \frac{b}{x}$

4. $4x + 2y = 8$, for y

$+4x + 2y = 8$

$-4x \quad -4x$

$\frac{2y}{2} = \frac{8}{2} - \frac{4x}{2}$

$y = 4 - 2x$

5. $-6y+2x=-18,$ for y

$$-6y+2x=-18$$
$$-2x \qquad -2x$$

$$\frac{-6y}{-6}=\frac{-18}{-6}-\frac{2x}{-6}$$

$$\boxed{y=3+\frac{x}{3}}$$

6. $A=\frac{1}{2}h(b_1+b_2),$ for b_1

$$\frac{A}{1}=\frac{1}{2}\cdot\frac{h}{1}\cdot\frac{(b_1+b_2)}{1}$$

$$\frac{A}{1}=\frac{h(b_1+b_2)}{2}$$

$$2A=h(b_1+b_2)$$

$$2A=hb_1+hb_2$$
$$-hb_2 \qquad -hb_2$$

$$\frac{2A-hb_2}{h}=\frac{hb_1}{h}$$

$$\frac{2A}{h}-b_2=b_1$$

$$\boxed{b_1=\frac{2A}{h}-b_2}$$

7. $C = \frac{5}{9}(F - 32)$, for F

$\frac{C}{1} = \frac{5}{9}\frac{(F-32)}{1}$

$C = \frac{5(F-32)}{9}$

$9C = 5(F-32)$

$9C = 5F - 160$

$+160 \quad +160$

$\frac{9C}{5} + \frac{160}{5} = \frac{5F}{5}$

$\frac{9C}{5} + 32 = F$

$F = \frac{9C}{5} + 32$