

## 1.4 Rewriting Equations and Formulas p. 28

**Literal Equation**: an equation w/ 2 or more variables

To rewrite a literal equation, solve for one variable in terms of the other variable(s)  
(you are not solving to find a solution of a #)

1)  $2y + 5x = 6$  Solve for  $y$  for #'s 1-4

$$\begin{aligned} 2y + 5x &= 6 \\ -5x &\quad -5x \\ \hline 2y &= -5x + 6 \\ \frac{2y}{2} &= \frac{-5x}{2} + \frac{6}{2} \\ \boxed{y} &= -\frac{5}{2}x + 3 \end{aligned}$$

2)  $5y + x = 10$

$$\begin{aligned} 5y + x &= 10 \\ +x &\quad +x \\ \hline 5y &= x + 10 \\ \frac{5y}{5} &= \frac{x}{5} + \frac{10}{5} \\ \boxed{y} &= \frac{1}{5}x + 2 \end{aligned}$$

3)  $x - 4y = 1$

$$\begin{aligned} x - 4y &= 1 \\ -4y &\quad -4y \\ \hline -4y &= -4x + 1 \\ \frac{-4y}{-4} &= \frac{-4x}{-4} + \frac{1}{-4} \\ \boxed{y} &= x - \frac{1}{4} \end{aligned}$$

4)  $12 = 6x + 3y$

$$\begin{aligned} 12 &= 6x + 3y \\ -6x &\quad -6x \\ \hline -6x + 12 &= 3y \\ \frac{-6x + 12}{3} &= \frac{3y}{3} \\ -2x + 4 &= y \\ \boxed{y} &= -2x + 4 \end{aligned}$$

Solve for the red variable:

5)  $S = \pi r^2 + \pi r l$

$$\begin{aligned} S &= \pi r^2 + \pi r l \\ -\pi r^2 &\quad -\pi r^2 \\ \hline S - \pi r^2 &= \pi r l \\ \frac{S - \pi r^2}{\pi r} &= \frac{\pi r l}{\pi r} \\ \boxed{\frac{S - \pi r^2}{\pi r}} &= l \end{aligned}$$

6)  $A = bh$

$$\begin{aligned} A &= bh \\ \frac{A}{h} &= \frac{bh}{h} \\ \boxed{\frac{A}{h}} &= b \end{aligned}$$

$$7) \frac{I}{rt} = \frac{Prt}{rt}$$

$$\boxed{\frac{I}{rt} = P}$$

$$8) S = \cancel{2\pi r^2} + 2\pi r h$$
$$\underline{-2\pi r^2} \quad \underline{-2\pi r^2}$$

$$\frac{S - 2\pi r^2}{2\pi r} = \frac{\cancel{2\pi r} h}{2\pi r}$$

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

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

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

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

$$10) 2x + 4y = 11$$
$$\underline{-2x} \quad \underline{-2x}$$

$$\frac{4y}{4} = \frac{-2x + 11}{4}$$

$$\boxed{y = -\frac{1}{2}x + \frac{11}{4}}$$