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

$\dfrac{-5x \quad -5x}{}$

$\dfrac{2y}{2} = \dfrac{-5x}{2} + \dfrac{6}{2}$

$\boxed{y = -\dfrac{5}{2}x + 3}$

2) $5y - x = 10$

$\dfrac{+x \quad +x}{}$

$\dfrac{5y}{5} = \dfrac{x}{5} + \dfrac{10}{5}$

$\boxed{y = \dfrac{1}{5}x + 2}$

3) $4x - 4y = 1$

$\dfrac{-4x \quad -4x}{}$

$\dfrac{-4y}{-4} = \dfrac{-4x}{-4} + \dfrac{1}{-4}$

$\boxed{y = x - \dfrac{1}{4}}$

4) $12 = 6x + 3y$

$\dfrac{-6x \quad -6x}{}$

$\dfrac{-6x + 12}{3} = \dfrac{3y}{3}$

$-2x + 4 = y$

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

Solve for the red variable:

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

$\dfrac{-\pi r^2 \quad -\pi r^2}{}$

$\dfrac{S - \pi r^2}{\pi r} = \dfrac{\pi r \ell}{\pi r}$

$\boxed{\dfrac{S - \pi r^2}{\pi r} = \ell}$

6) $\dfrac{A}{h} = \dfrac{bh}{h}$

$\boxed{\dfrac{A}{h} = b}$

7) $\dfrac{I}{rt} = \dfrac{P\cancel{rt}}{\cancel{rt}}$

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

8) $S = 2\pi r^2 + 2\pi r h$
   $-2\pi r^2 \quad -2\pi r^2$

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

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

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

$\dfrac{9}{5}C = F - 32$
$\phantom{\dfrac{9}{5}C = F} + 32$
$+ 32$

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

10) $2x + 4y = 11$
   $-2x \qquad\qquad -2x$

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

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