

# Math 1010 68

Solve a formula for a specific variable.

FORMULA = EQUATION

SIMPLIFY AN EQUATION

1. CLEAR FRACTIONS (WITH LCD)
2. DISTRIBUTE THROUGH PARENTHESES
3. COMBINE LIKE TERMS

Ex 1.  $f = \frac{Sg}{S+V}$ , solve for S.

$$(S+V) \cdot f = \frac{Sg}{\cancel{S+V}} \cdot (S+V) \quad \text{LCD} = (S+V)$$

$$(S+V) \cdot f = Sg$$

$$\begin{array}{r} \underline{Sf + Vf} = Sg \\ -Sf \phantom{+ Vf} \\ \hline \end{array}$$

$$\underline{Vf = Sg - Sf}$$

$$\rightarrow \frac{Vf}{g-f} = \frac{S(g-f)}{g-f}$$

$$\boxed{\frac{Vf}{g-f} = S}$$

# Math 1010 6.8

Solve a formula for a specific variable.

FORMULA = EQUATION

SIMPLIFY AN EQUATION

1. CLEAR FRACTIONS (WITH LCD)
2. DISTRIBUTE THROUGH PARENTHESES
3. COMBINE LIKE TERMS

Ex 1.  $f = \frac{sg}{s+v}$ , solve for  $s$ .

$$(s+v) \cdot f = \frac{sg}{\cancel{(s+v)}} \cdot \cancel{(s+v)} \quad \text{LCD} = (s+v)$$

$$(s+v) \cdot f = sg$$

$$\begin{array}{r} \cancel{sf} + vf = \underline{sg} \\ -sf \end{array}$$

$$\star \quad \underline{vf = sg - sf}$$

$$\rightarrow \frac{vf}{g-f} = \frac{s(g-f)}{\cancel{g-f}}$$

$$\boxed{\frac{vf}{g-f} = s}$$

Ex 2

$$\frac{V^2}{R^2} = \frac{2g}{R+h}, \quad \boxed{\text{for } h.}$$

$$\text{LCD} \Rightarrow R^2(R+h)$$

$$\frac{R^2(R+h) \cdot V^2}{R^2} = \frac{2g}{R+h} \cdot \frac{R^2(R+h)}{R+h}$$

$$(R+h)V^2 = 2gR^2$$

$$\frac{RV^2}{RV^2} + \frac{hV^2}{RV^2} = 2gR^2 \quad -RV^2$$

$$\frac{hV^2}{V^2} = \frac{2gR^2 - RV^2}{V^2}$$

$$\boxed{h = \frac{2gR^2 - RV^2}{V^2}}$$

□.