

SMART

RATE X TIME = WORK [W=12]

| | | | |
|-----|------------------|-------|----|
| X | $\frac{12}{D+2}$ | $D+2$ | 12 |
| Y | $\frac{12}{D}$ | D | 12 |
| X+Y | 5 | 3 | 15 |

$$\frac{12}{D+2} + \frac{12}{D} = 5$$

$$\left[D(D+2) \frac{12}{D+2} \right] + \left[D(D+2) \frac{12}{D} \right] = 5(D)(D+2)$$

$$12D + 12(D+2) = 5D(D+2)$$

$$12D + 12D + 24 = 5D^2 + 10D$$

$$24D + 24 = 5D^2 + 10D$$

$$5D^2 - 14D - 24 = 0$$

ALGEBRA

RATE X TIME = WORK

| | | | |
|-----|-----------------|-------|----------------|
| X | $\frac{W}{D+2}$ | $D+2$ | W |
| Y | $\frac{W}{D}$ | D | W |
| X+Y | $\frac{5}{12}W$ | 3 | $\frac{5}{4}W$ |

$$\frac{W}{D+2} + \frac{W}{D} = \frac{5W}{12}$$

$$W \left[\frac{1}{D+2} + \frac{1}{D} \right] = W \left[\frac{5}{12} \right]$$

$$\frac{1}{D+2} + \frac{1}{D} = \frac{5}{12}$$

$$12(D)(D+2) \frac{1}{D+2} + 12(D)(D+2) \frac{1}{D} = 12(D)(D+2) \frac{5}{12}$$

$$12D + 12(D+2) = 5D(D+2)$$

$$12D + 12D + 24 = 5D^2 + 10D$$

$$24D + 24 = 5D^2 + 10D$$

$$5D^2 - 14D - 24 = 0$$