

Section 6.7: Applications

Monday, November 18, 2013
10:00 AM

Solving for the specified variable:

Solve for R_2 :

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}$$

and then evaluate for $R_1 = 12$ and $R = 3$

$$R R_1 R_2 \left(\frac{1}{R} \right) = \left(\frac{1}{R_1} + \frac{1}{R_2} \right) R R_1 R_2$$

$$R_1 R_2 = R R_2 + R R_1$$

$$R_1 R_2 - R R_2 = R R_1$$

$$R_2 (R_1 - R) = R R_1$$

$$R_2 = \frac{R R_1}{R_1 - R}$$

$$= \frac{3(12)}{12-3}$$

$$= \frac{36}{9} = 4$$

Beverly can drive 600 miles in the same time as it takes Susan to drive 500 miles. If Beverly drives 10 mph faster than Susan, then how fast does Beverly drive?

	d	$=$	r	\cdot	t
Beverly	600		$r + 10$		$\frac{600}{r + 10}$
Susan	500		r		$\frac{500}{r}$

$$\frac{600}{r + 10} = \frac{500}{r}$$

$$600r = 500(r + 10)$$

$$6r = 5(r + 10)$$

$$6r = 5r + 50$$

$$r = 50 \text{ mph}$$

Beverly drives at 60 mph.