Work Problems

It takes Herman 15 hours to pick forty bushels of apples. Kristin can pick the same amount in 9 hours. How long would it take them if they worked together? $R \times T = W$

	R	× T	= W
H	$\frac{1}{15}$	t	$\frac{t}{15}$
K	$\frac{1}{9}$	t	$\frac{t}{9}$

$$\frac{t}{15} + \frac{t}{9} = 1$$

LCM: 45

$$45\left(\frac{t}{15} + \frac{t}{9} = 1\right)$$

$$3t + 5t = 45$$

$$8t = 45$$

$$t = \frac{45}{8} = 5.625 \text{ hours}$$

5 hours 37.5 min

Working together, Scott and Rob can install a new deck in 6 hours. Had he done it alone it would have taken Rob 10 hours. Find how long it would take Scott to do it alone.

	R	× T	= W
S	$\frac{1}{x}$	6	$\frac{6}{x}$
R	$\frac{1}{10}$	6	$\frac{6}{10}$

$$\frac{6}{x} + \frac{6}{10} = 1$$

LCM: $10x$

$$10x\left(\frac{6}{x} + \frac{6}{10} = 1\right)$$

$$60 + 6x = 10x$$

$$60 = 4x$$

$$15 = x$$

hours