

An apprentice takes twice as long as a master carpenter to build a set of cabinets. When the two work together, they can finish a set of cabinets in 6 hours. How long does it take the apprentice to finish a set of cabinets working alone?

	hrs	Part in 1hr	
Master	$\frac{x}{2}$	$\frac{2}{x}$	$\left(\frac{1}{\frac{x}{2}}\right) \cdot 2x$
app.	x	$\frac{1}{x}$	
Total	6	$\frac{1}{6}$	

$$\left(\frac{2}{x} + \frac{1}{x} = \frac{1}{6}\right) 6x$$

$$12 + 6 = x$$

$$18 = x$$

Ethan can paddle his canoe 3 miles in the same time his sister can paddle 7 miles. If Ethan's speed is 2mph slower than his sister, find the rate Ethan is paddling.

	$D = R \cdot T$
Ethan	$3 = x \cdot \frac{3}{x}$
Sister	$7 = (x+2) \cdot \frac{7}{x+2}$

$$\frac{3}{x} = \frac{7}{x+2}$$

$$7x = 3x + 6$$

$$-3x \quad -3x$$

$$4x = 6$$

$$x = \frac{3}{2} \text{ mph}$$

Suppose one painter can paint the entire house in twelve hours, and the second painter takes eight hours. How long would it take the two painters together to paint the house?

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#'s 7, 11, 15, 17, 21, 25
27, 33, 35

Questions may come from
chapter test