C11 - 6.6 - Hoses filling Pool Notes

Two hoses together fill a pool in 2 hours. If only hose A is used, the pool fills in 3 hours. How long would it take to fill the pool if only hose B were used?

	Amount	Time	Rate
Hose A	1 pool	3 hours	$\dfrac{1\ pool}{3\ hours}$
Hose B	1 pool	x hours	$\dfrac{1\ pool}{x\ hours}$
Together	1 pool	2 hours	$\dfrac{1\ pool}{2\ hours}$
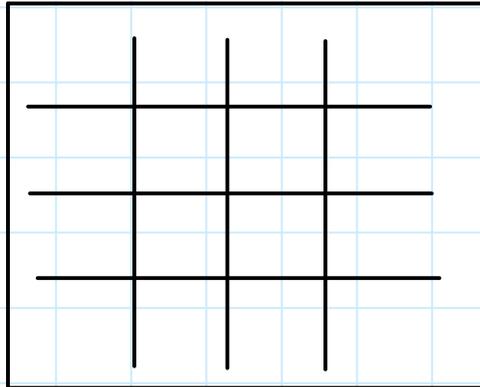
$$\frac{1}{3}+\frac{1}{x}=\frac{1}{2}$$
$$\left(\frac{1}{3}+\frac{1}{x}=\frac{1}{2}\right)\times 6x$$
$$2x+6=3x$$
$$-2x\qquad\quad -2x$$
$$6=x$$

It will take 6 hours.

Add Rates Together to equal the rates together

$$v=\frac{d}{t}\qquad\qquad r=\frac{a}{t}$$