Word Problems

3. Solve the following word problems:

a) **DISTANCE Problem:** Ed is a runner and he runs a 8 km loop every day. The first 4 km, he runs at 12km/hr. He runs much slower on the way home. If it takes him 1 hour in total to run the loop, how fast is he running for the last 4 km?

b) **WORK Problem:** It takes Louise 2 hours to paint a room and it takes Pete 8 hours to paint the same room. How long does it take them if they paint the room together?

c) The sum of a number and it's reciprocal is $\frac{10}{3}$, what is the number?

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Answers

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a) DISTANCE Problem: Ed is a runner and he runs a 8 km loop every day. The first 4 km, he runs at 12km/hr. He runs much slower on the way home. If it takes him 1 hour in total to run the loop, how fast is he running for the last 4 km?

(6)

	D	R	t
There	4 km	12 km/hr	$\frac{4}{12}$
Back	4 km	x	$\frac{4}{x}$

$$\frac{4}{12} + \frac{4}{x} = 1$$

$$4x + 48 = 12x$$

$$48 = 8x$$

$$x = 6$$

Ed runs
6 km/hr
for the last 4 km

b) WORK Problem: It takes Louise 2 hours to paint a room and it takes Pete 8 hours to paint the same room. How long does it take them if they paint the room together?

$$\frac{1}{2} + \frac{1}{8} = \frac{1}{x}$$

$$4x + x = 8$$

$$5x = 8$$

$$x = 8/5 \text{ hrs}$$

It takes 8/5 (1.6) hours to paint together

(7)

c) The sum of a number and it's reciprocal is $\frac{10}{3}$, what is the number?

$$\left[x + \frac{1}{x} = \frac{10}{3} \right] \times 3x$$