TCS Digital

A & B are two person approaching point 'O' perpendicular to each other. When A is at O, B is 300 m away from O. After 3 minutes A & B are in equidistant from. In after 5 minutes A & B are in equidistant from. What is the distance between A & B?

A

$3x = 300 - 3y$

$\Rightarrow 3x + 3y = 300 \quad -(1)$

$\Rightarrow 8x = 5y - (3x - 3y)$

$\Rightarrow 8x = 8y - 300$

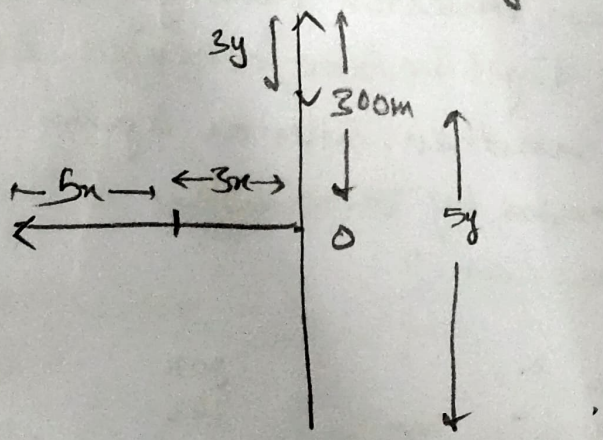
$\Rightarrow 8y - 8x = 300 \quad -(2)$

$3x + 3y = 8y$

$\Rightarrow 11x = 5y$

$\therefore \frac{x}{y} = \frac{5}{11}$

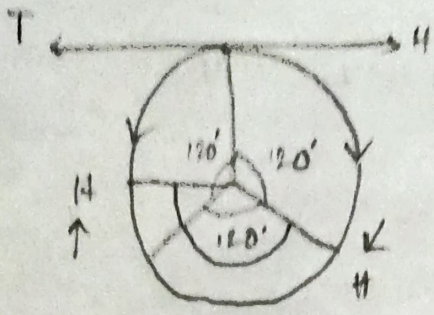
$x : y = 5 : 11$



(2) A hare & a tortoise started from same distant in a circular path to their opposite direction. When hare covered 1/3 distance tortoise started. When tortoise covered 1/4 distance. Then hare crosses tortoise. What factor & speed tortoise have to improve so that tie the game?

A

$360 \times \frac{1}{3} = 120°$

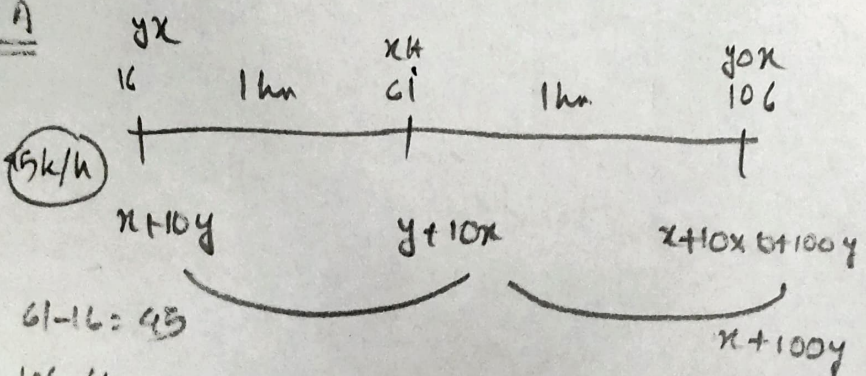


H	T
~~150°~~	~~90°~~
(5)	: 3

H	T
~~90°~~	~~270°~~
5x	1 : 3 x(5)

3) While moving in a car a man observed a mileston having two digit number. After 1 hour he observed another mileston having also two digit number but the digit became reversed. After 1 hour he observed another mileston again reversed but separated by zero. What is the average speed of the car?

A



61-16 = 45

106-61 = 45

$y + 10x - x - 10y = x + 100y - y - 10x$

$9x - 9y = 99y - 9x$

$\Rightarrow 18x = 108y$

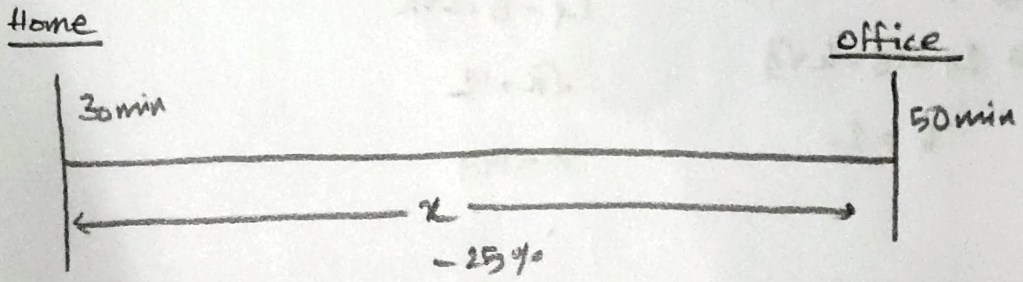
$\Rightarrow \frac{x}{y} = \frac{108}{18} = \frac{6}{1}$

$\therefore x = 6$

$y = 1$

4) Esha starting from 'O' 30 min late from her office. Due to bad condition of road she reduces her usual speed by ~~20~~ 25 percent and reached office 50 min late. what usual time she takes if she moves at with that user speed?

A



$V \times \frac{75}{100}$

$VT = \frac{x}{V}$

$\frac{x}{\frac{3V}{4}} - \frac{x}{V} = 20$

$\frac{x}{V}\left(\frac{4}{3}-1\right) = 20$ $\quad \frac{4x}{3V} - \frac{x}{V} = 20$

$\frac{x}{V} = 20 \times 3 = 60$ min.

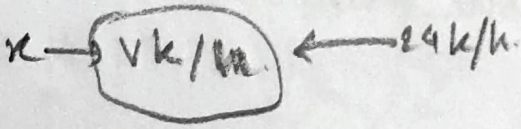
5) If a diminished velocity of a locomotive engine is directly proportional to the ~~sq.~~ root of the numer of wagon attached. Only engine can move with a speed of 20 km/hr. When 9 wagon is attached engine can move with the speed of 18 km/hr.

(i) Find the max no. of ~~wagon~~ that can be carried by engine

(ii) Find the min no. of wagon which ~~when~~ will attached that the engine tends ~~has~~ to ~~for~~ move.

A

$x = 9$
$v = 18$



$24 - v \propto \sqrt{x}$

$\Rightarrow 24 - v = k\sqrt{x}$

$\Rightarrow 24 - 18 = k\sqrt{3}$

$k = 2$

$24 - v = 2\sqrt{x}$

$v = 0$

$24 - 0 = 2\sqrt{x}$

$\sqrt{x} = 12$

$x = 144$