Q. A man can row downstream 20km in 2 hours, and upstream 4km in 2 hours. Find his speed of rowing in still water. Also find the speed of the current.

<u>Soln</u>:— Let the speed of the man in still water be x km/h and speed of the current be y km/h.

Speed of boat in down stream = $(x+y)$ km/h

"   "   "   "   up stream = $(x-y)$ km/h

$$Time = \frac{Distance}{Speed}$$

$\therefore \frac{\overset{10}{\cancel{20}}}{x+y} = \frac{\cancel{2}}{1} \Rightarrow x+y = 10 \quad \text{————} \quad ①$

Again $\frac{\overset{2}{\cancel{4}}}{x-y} = 2 \Rightarrow x-y = 2 \quad \text{————} \quad ②$

Adding eqn ① and ②

$$x+y = 10$$
$$x-y = 2$$
$$\overline{}$$
$$2x = 12$$
$$\therefore x = 6 \, km/h$$

Putting the value of x in eqn ①

$$x+y = 10$$
$$\Rightarrow 6+y = 10$$
$$y = 4 \, km/h$$

Hence, speed of man
= 6 km/h

Speed of stream = 4 Km

Q. A Sailor goes 8 km downstream in 40 min. and returns in 1 hour. Find the speed of the sailor in still water and the speed of the current.

Q. A boat goes 12 km upstream and 40 km downstream in 8 hours. It can go 16 km upstream and 32 km downstream in the same time. Find the speed of the boat in still water and the speed of stream.

Q. A boat goes 30 km upstream and 44 km. downstream in 10 hours. In 13 hours, It can go 40 km upstream and 55 km down-stream. Determine the speed of the stream and that of the boat in still water.