**1.To swim upstream English Channel, a swimmer takes twice the time he takes to swim downstream. His speed in still water is 12km/hr. Find the speed of the English Channel.**

**Ans:-**

Distance is same  
∴ D=D  
∴ (u+12) x T =  (u-12) x 2T  
**∴ u=4 km/hr = Speed of English Channel**

**2. Pramod's home and school are separated by a river. It takes him one hour to row to the school and come back. The river runs at a speed of 2.4 km/hr. Pramod's speed in still water is 12 km/hr. How far is the school from Pramod's home?**

**Ans:-**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| D | + | D | = | 1 |
| 14.4 | 9.6 |

**∴ D=5.76 km**

**3. While talking about a place to his friend Prashant said, "I could swim downstream to the place in 12 hours but while coming upstream it took 18 hours. The river was running at a speed of 6 km/hr." What is his speed in still water?**

**Ans:-** Distance is same  
∴ D=D  
∴ (X+6) x 12 = (X-6) x 18  
**∴ X=30 km/hr = Speed of Prashant**

**4. A child swims in still water at 4.5 km/hr. The river is flowing at a rate of 1.5 km/hr. Find the average speed of the child if he swims same distance upstream(X) and downstream(Y).**

Ans:- **4 km/hr**

X=u+v=4.5+1.5=6

Y=u-v=4.5-1.5=3

Average Speed=2XY/X+Y=2\*6\*3/9=4

5. **The time taken by swimmer to swim upstream is 4 hours more than the time he takes to swim downstream. He swims at a speed of 10 km/hr in still water. The stream is flowing gently at 2 km/hr. What is the swimming distance one side?**

Ans:- D = D  
∴ 12 x T = 8 x (T+4)  
∴ T = 8 hours = Time for downstream

**Distance =** 12km/hr x 8 hours = **96 km**

**6. Practicing for a competition, a swimmer saw that he could swim 20 km downstream in just 1 hr while it took 2 hrs to swim upstream. Find the speed of the river and that of the swimmer respectively.**

**An:-** 5 km/hr ; 15 km/hr

7. **A fisherman can row his boat to the market for 80 km along the stream. For this he takes 1 hour 20 minutes. His son says that, his father’s rowing speed in still water is 45 km/hr. How much time should he take to row the same distance back, against the stream?**

**Ans:- 2 hours 40 minutes**

**8. A boat sails at a speed of 15 kmph in still waters. It travels 30 km downstream and comes back in four and a half hours. What is the speed of the stream?**

**Ans:- 5 km/h**

**9. A steamer takes 8 minutes to cover a distance of 4.8 km downstream while it takes 9 minutes to come back to the same spot upstream. Find the speed of the current.**

**Ans:- 2 kmph**

**10. Speed of boat in still water = 9 kmph  
Speed of water current = 1.5 kmph  
  
Find the time taken by the boat to go 105 km downstream and come back.**

**Ans:-24hr**

**11. A fisherman can row in still water at 5 kmph. The speed of the water is 1 kmph. He takes 1 hour to row to a place and reach the shore back. How far is the place from the shore?**

**Ans:-2.4 km**

**12.The speed of a swimmer along the water current is 15 kmph. Water current is 2.5 kmph. Find his speed against the current.**

Ans:-10K/h

**13-A:-A boat covers same distance upstream and downstream both. The time take upstream is 8 hours 48 minutes while the time taken downstream is 4 hrs. Find (Speed of boat) : (Speed of water).**

**Ans:- 8 : 3**

D:D

X\*44/5=Y\*4

X/Y=20/44=5/11

U=X+Y/2=8k/m

V=X-Y/2=3km

**13-B:-A man takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of the boat (in still water) and the stream is:**

**Ans:-3:1**

D:D

X\*T=Y\*2T

X/Y=2/1

U=3/2=1.5=3

V=1/2=0.5=1

14. A man can row three-quarters of a kilometre against the stream in 111⁄4 minutes and down the stream in 71⁄2minutes. The speed (in km/hr) of the man in still water is:

Ans: 5km

