Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

1. Downstream/Upstream:

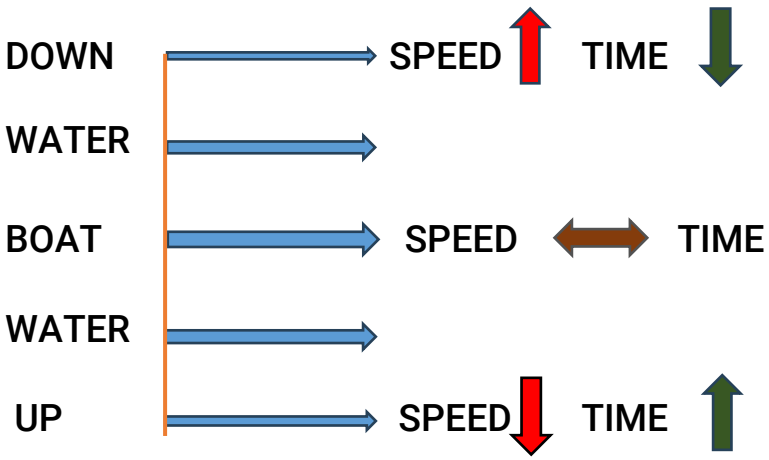
In water, the direction along the stream is called downstream. And, the direction against the stream is called upstream.

2. If the speed of a boat in still water is *u* km/hr and the speed of the stream is *v* km/hr, then:
   Speed downstream = $(u + v)$ km/hr.
   Speed upstream = $(u - v)$ km/hr.
3. If the speed downstream is *a* km/hr and the speed upstream is *b* km/hr, then,

$$\text{Speed in still water} = \frac{1}{2}(a + b) \text{ km/hr}$$

$$\text{Rate of stream} = \frac{1}{2}(a - b) \text{ km/hr}$$

CONCEPTS



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

1)A man's speed with the current is 15 km/hr and the speed of the current is 2.5 km/hr. The man's speed against the current is:
a)8.5 km/hr

b)9 km/hr

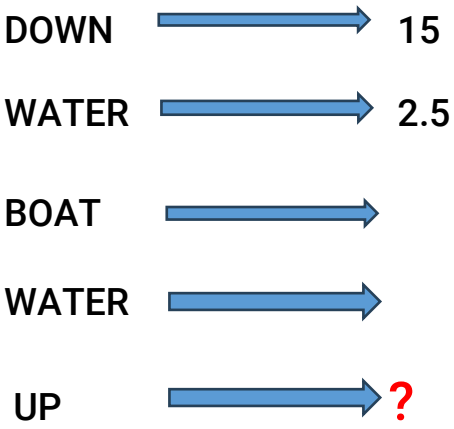
c)10 km/hr

d)12.5 km/hr

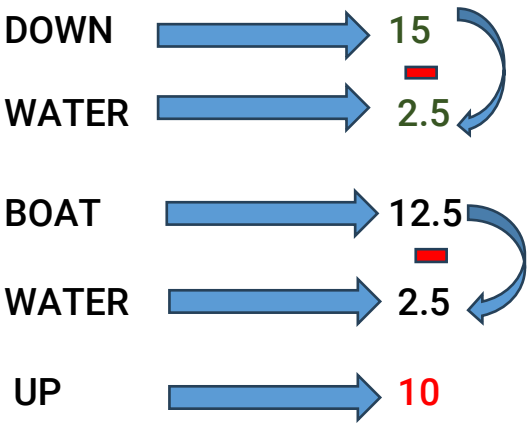
Ans: c)10 km/hr

SPEED CONCEPT

Given Data:

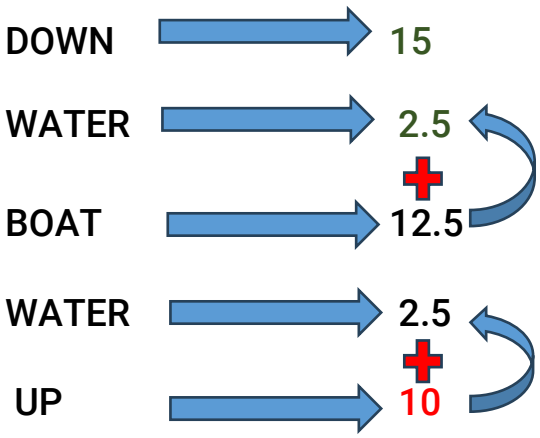


SOLUTION:



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

ALTERNATIVE SOLUTION



2) In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:
a)3 km/hr

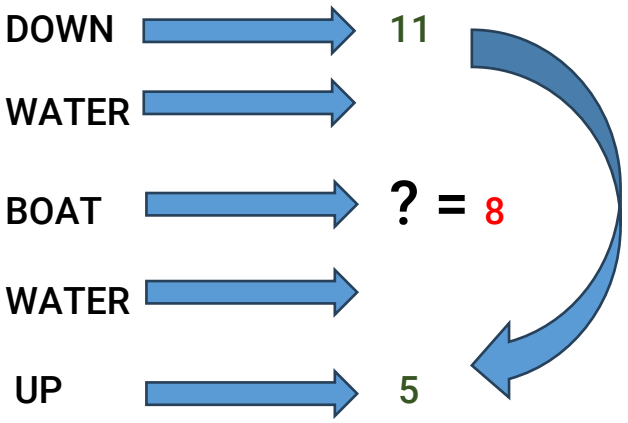
b)5 km/hr

c)8 km/hr

d)9 km/hr

Ans: c)8 km/hr

SOLUTION



(11+5)/2=8

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

3)A man rows to a place 48 km distant and come back in 14 hours. He finds that he can row 4 km with the stream in the same time as 3 km against the stream. The rate of the stream is:

a)1 km/hr

b)1.5 km/hr

c)2 km/hr

d)2.5 km/hr

Ans: a)1 km/hr

SOLUTION

Suppose he move 4 km downstream in x hours. Then,

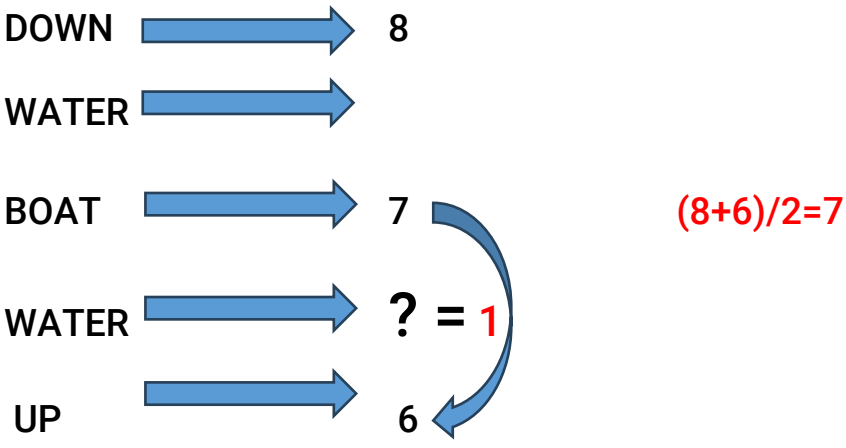
Speed DS =4/ x

Speed US = 3/ x

48 x (1/4+1/3) = 14

x=1/2

So, Speed downstream = 8 km/hr, Speed upstream = 6 km/hr.



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

4) 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:

a)2 : 1

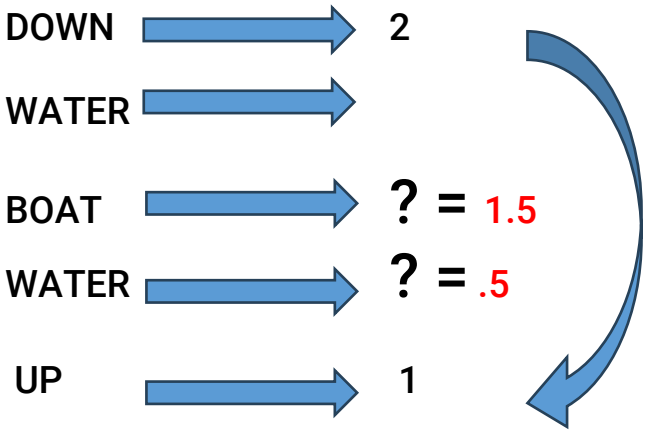
b)3 : 1

c)3 : 2

d)4 : 3

Ans: b)3 : 1

SOLUTION



BOAT: WATER

1.5 : .5 Ans: 3 : 1

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

5) Speed of a boat in standing water is 9 kmph and the speed of the stream is 1.5 kmph. A man rows to a place at a distance of 105 km and comes back to the starting point. The total time taken by him is:
d)16 hours

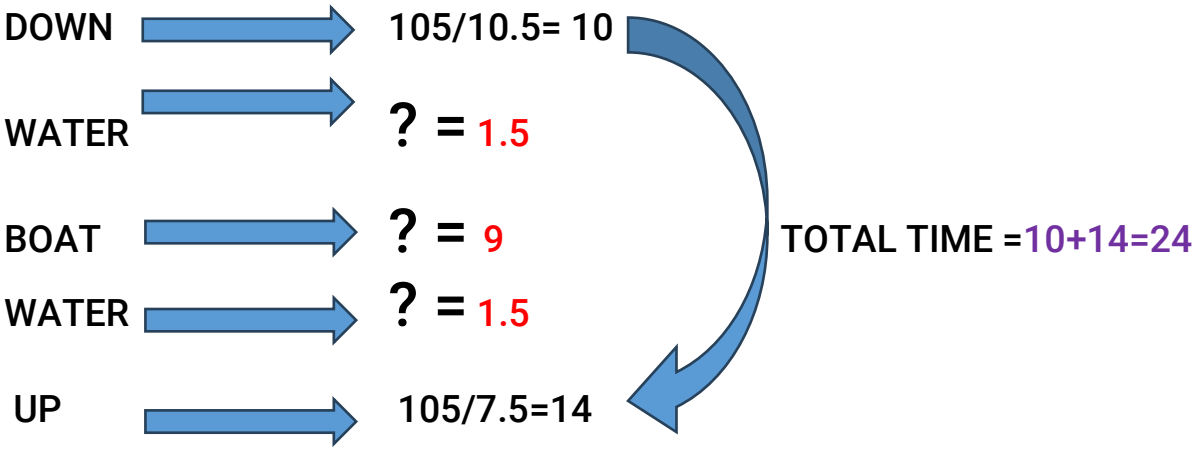
c)18 hours

b)20 hours

d) 24 hours

Ans: a) 24 hours

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

6) A man can row three-quarters of a kilometre against the stream in 11 $\frac{1}{4}$ minutes and down the stream in 7$\frac{1}{2}$ minutes. The speed (in km/hr) of the man in still water is:

a)2

b)3

c)4

d)5

Ans: d) 5

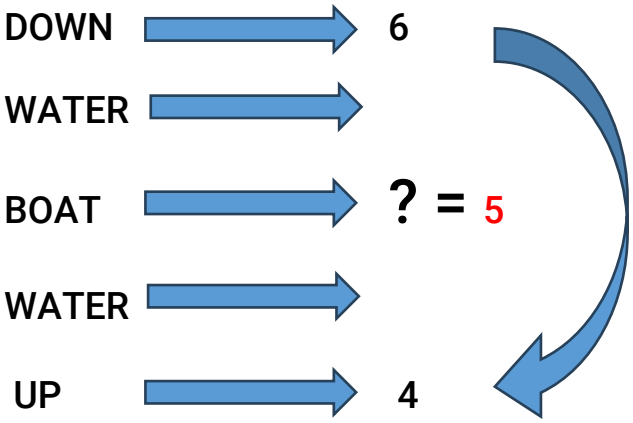
SOLUTION

U S=(3/4)km /(45/4 x 60)hr

= 3/4 x 16/3=4km/hr

D S =(3/4)km /(15/2 x 60)hr

= 3/4 x 8=6km/hr



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

7) A boatman goes 2 km against the current of the stream in 1 hour and goes 1 km along the current in 10 minutes. How long will it take to go 5 km in stationary water?

a)40 minutes

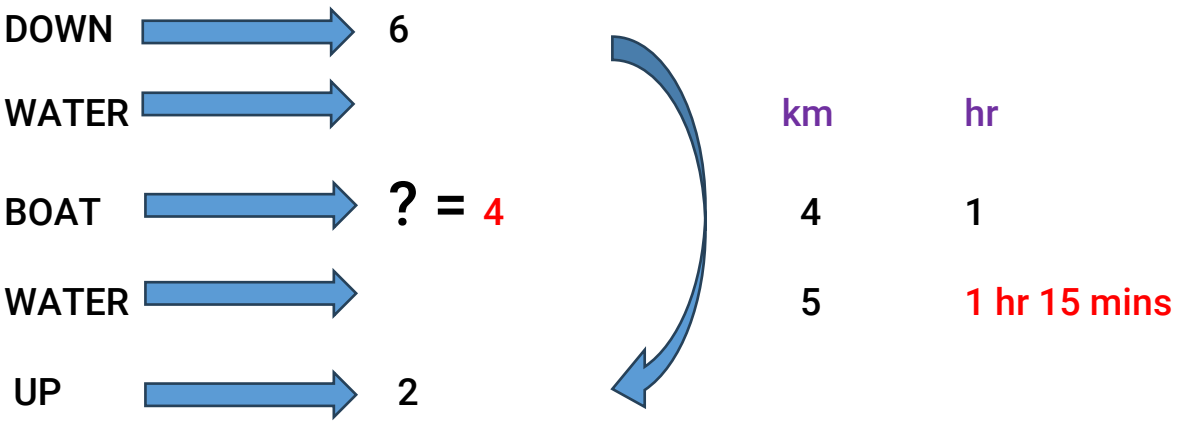
b)1 hour

c)1 hr 15 min

d)1 hr 30 min

Ans: c)1 hr 15 min

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

8) A boat covers a certain distance downstream in 1 hour, while it comes back in $1\frac{1}{2}$ hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?

a)12 kmph

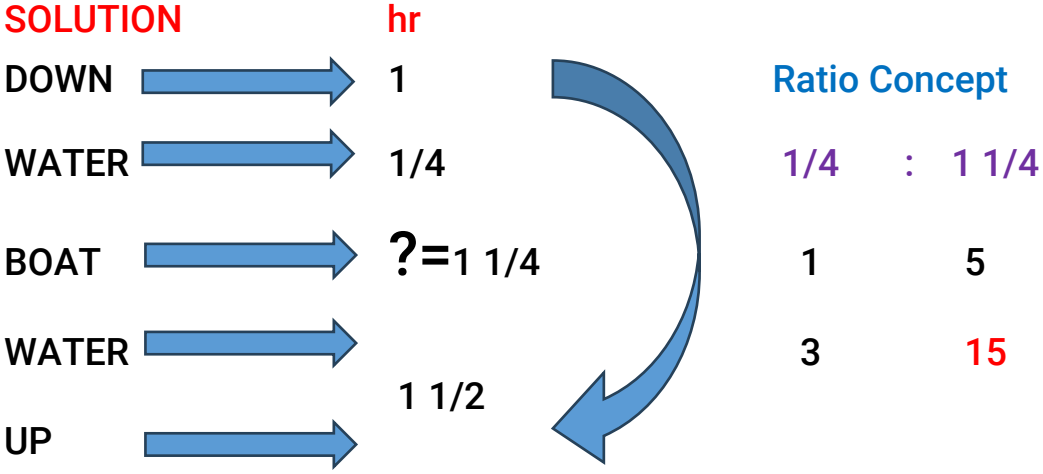
b)13 kmph

c)14 kmph

d)15 kmph

Ans: d)15 kmph

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

9) A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?

a) 2.4 km

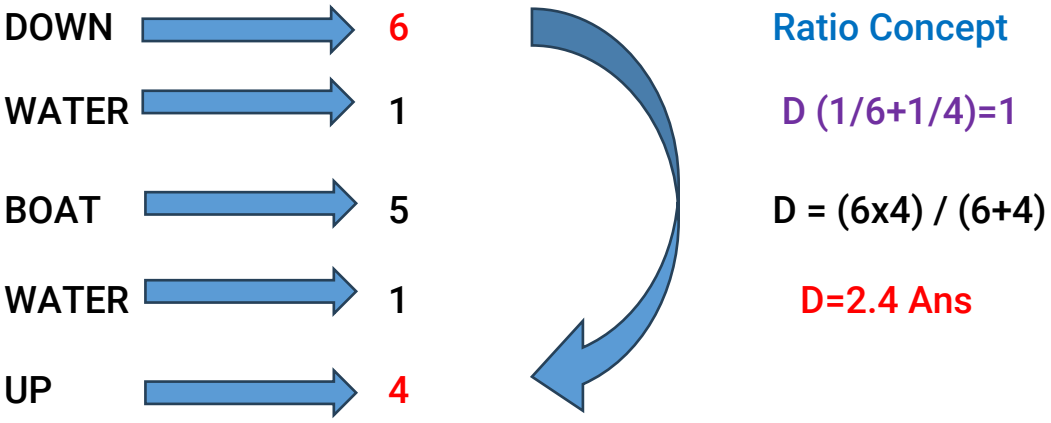
b) 2.5 km

c) 3 km

d) 3.6 km

Ans: a) 2.4 km

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

10) The speed of a boat in still water in 15 km/hr and the rate of current is 3 km/hr. The distance travelled downstream in 12 minutes is:

a)1.2 km

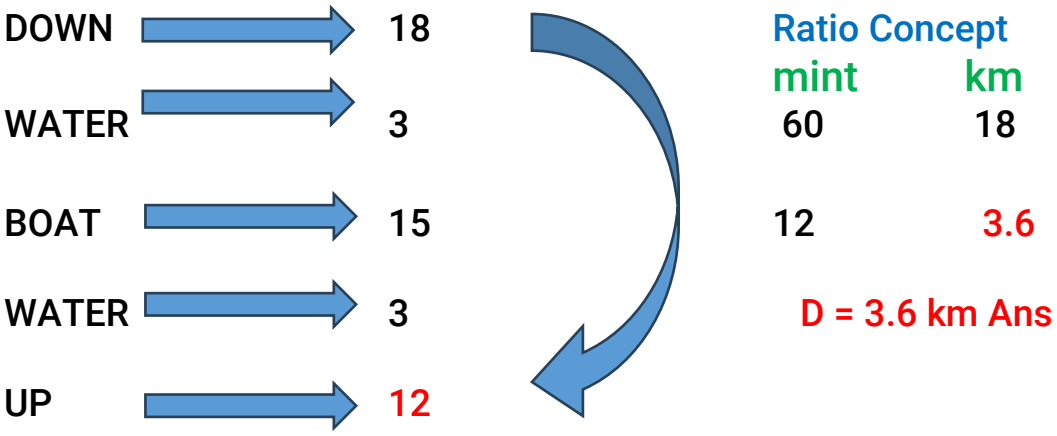
b)1.8 km

c)2.4 km

d)3.6 km

Ans: c)2.4 km

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

11) A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water?

a)4 km/hr

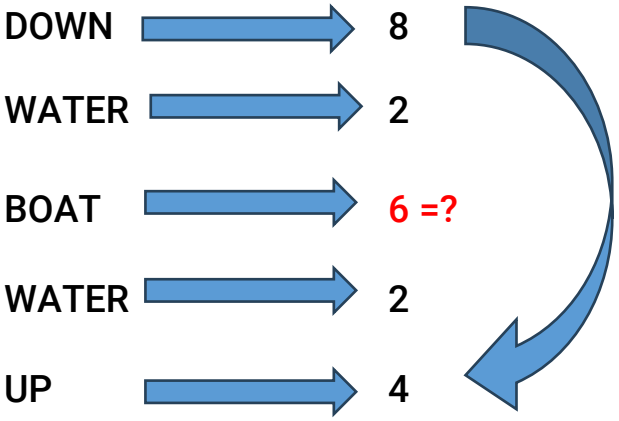
b)6 km/hr

c)8 km/hr

d)Data inadequate

Ans: b)6 km/hr

SOLUTION



Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

12) A boat can travel with a speed of 13 km/hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.

a)2 hours

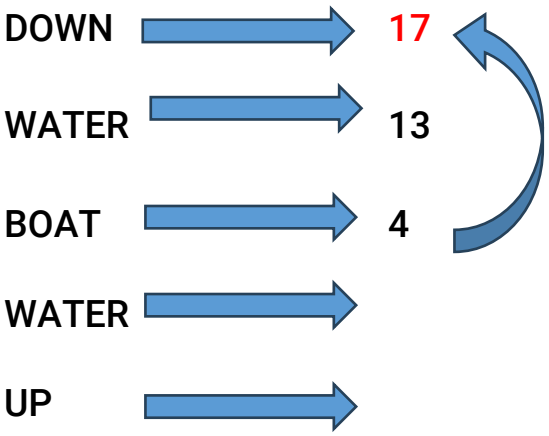
b)3 hours

c)4 hours

d)5 hours

Ans: c)4 hours

SOLUTION



	km	hr
	17	1
	68	4

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

13) A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?

a)2 : 1

b)3 : 2

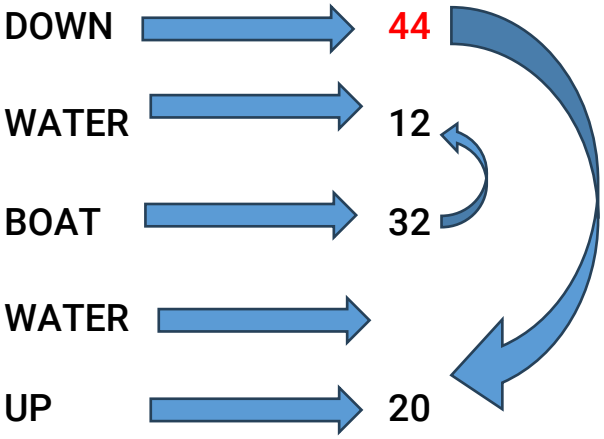
c)8 : 3

d)Cannot be determined

Ans: c)8 : 3

SOLUTION

8 48/60 = 8 4/5 =44/5



B : W

32 : 12

8 : 3 ANS

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

14) A motorboat, whose speed in 15 km/hr in still water goes 30 km downstream and comes back in a total of 4 hours 30 minutes. The speed of the stream (in km/hr) is:

a)4

b)5

c)6

d)10

Ans: b) 5

Let the speed of the stream be *x* km/hr. Then,
Speed downstream = (15 + *x*) km/hr,
Speed upstream = (15 - *x*) km/hr.

$$\frac{30}{15+x}+\frac{30}{15-x}=4\ ½\ \text{hr}$$

Options method best

SOLUTION

30/20 + 30/10 =4 ½ hr

DOWN → 20

WATER → 5

BOAT → 15

WATER →

UP → 10

Name of the Bundle	PROFICIENT BUNDLE V2	Subject	APTITUDE
Topic	BOAT AND STREAM	Last updated on	12 March 2024

15) A man covers 32 km downstream and 36 km upstream in 7 hours. He covers 40 km downstream and 48 km upstream in 9 hours what is the speed of the man in still water?
a) 6km/h
b) 10 km/h
c) 8 km/h
d) 2 km/h

Ans: b) 10 km/h

SOLUTION

32 / D + 36 / U = 7 -----(1)

40 / D + 48 / U = 9 ------(2)

(32 / D + 36 / U) x 4 = 10 x 4

(40 / D + 48 / U) x 3 = 7 x 3

8/D = 1 D=8 hr

36/U = 3

U = 12hr

ALTERNATIVE SOLUTION