Q:1 A boat goes at a speed of 30 km/h in still water. If the speed of the current is 5 km/h. What time will it take to travel 50 km upstream and then 70 km downstream?
1. 5 hours
2. 3 hours
3. 4 hours
4. 2 hours
5. 6 hours

Q:2 A boat travels upstream in 6 hours and it travels the same distance downstream in 4 hours. The speed of the stream is what percent of the speed of the boat?
1. 25%
2. 30%
3. 20%
4. 40%
5. Data Insufficient

Q:3 Two boats A and B are going downstream. The distance between them is 150 km and the speed of the stream is 5 km/hr. If boat A reaches 2 hours before boat B, what is the ratio of the speed of boat A to boat B?
1. 10 : 13
2. 4 : 3
3. 7 : 5
4. 8 : 5
5. Data Insufficient

Q:4 A man can swim at a speed of 8 km/h in still water. If the speed of the stream is 2 km/h, it takes 40 minutes to travel to one place and come back. How far is that place?
1. 1.5 km
2. 2.5 km
3. 3 km
4. 4.5 km
5. cannot be determined

Q:5 In a river, the speed of the stream is 8 km/hr and a swimmer can swim at the speed of 7 km/h in still water. If he is swimming downstream and a 100-meter-long boat with a speed of 6 km/h in still water is going in the same direction as the swimmer, then find the time in which the swimmer crosses the boat.

1. 13 min
2. 12 min
3. 8 min
4. 6 min
5. 10 min

Q:6 The speed of the current is 8 km/hour. Two boats A and B go upstream with the speed of 80 km/hour and 98 km/hour respectively. If boat A starts first and after 1 hour B will start then, find the time when both boats A and B will meet.
1. 8 Hours
2. 6 Hours
3. 10 Hours
4. 4 Hours
5. 2 Hours

Q:7 A boat sailing downstream crosses a ship of length 225 m in 4 minute 10 seconds. Find the speed (In meter/minute) of boat in still water if it crosses the same ship in 18 minute 45 seconds sailing upstream.
1. 36 meter/minute
2. 33 meter/minute
3. 30 meter/minute
4. 48 meter/minute
5. 54 meter/minute

Q:8 Two boats A and B have speeds of 29 km/hour and 25 km/hour. A goes upstream and B goes downstream and crossed each other in 7 seconds. If the speed of the current is 5 km/hours then find the distance between them at the starting.
1. 95 meter
2. 100 meter
3. 105 meter
4. 110 meter
5. 120 meter

Q:9 A boat sails 15 km of a river upstream in 5 hours. How long will it take to cover the same distance downstream, if the speed of the current is one-fourth the speed of the boat in still water?
1. 1.8 hour
2. 3 hour
3. 4.5 hour

4. 4 hour
5. 5 hour

Q:10 The upstream speed from point A is 10 kmph. If a boat reaches a bridge and takes a U-turn towards A at the speed of 15 kmph. The time taken for the boat in return journey is 1 hour less than the upstream journey. Calculate the distance from point A to the bridge.
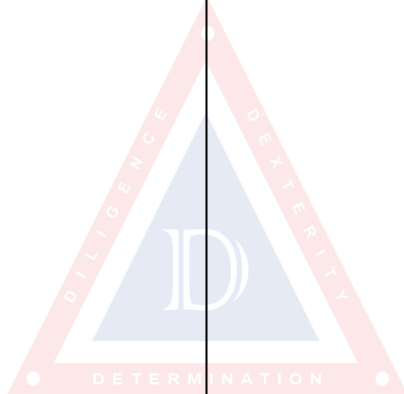**1.** 50 km
2. 30 km
3. 20 km
4. 25 km
5. 31 km

Answer Key

1. (3)	2. (3)	3. (5)	4. (2)	5. (4)
6. (4)	7. (2)	8. (3)	9. (2)	10. (2)

Answers and Solutions

Q:1 The correct answer is **Option 3** i.e. **4 hours.**
Speed = Distance × Time
If the speed of boat or swimmer is x km/h and the speed of the stream is y km/h,
then, speed of boat upstream = $(x - y)$ km/h
speed of boat downstream = $(x + y)$ km/h
The relative speed of the boat in upstream = 30 − 5 = 25 km/h
Distance = 50 km
Time = distance/speed = 50/25 = 2 hours
The relative speed in downstream = 30 + 5 = 35 kmph
Distance = 70 km
Time = 70/35 = 2 hours
Total time = 2 + 2 = 4 hours

Q:2 The correct answer is **Option 3** i.e. **20%.**
Let, the speed of the stream be y km/hr and, the speed of the boat be z km/hr
Now, Upstream total speed = $(z - y)$ km/hr
In Downstream, total speed = $(z + y)$ km/hr
Distance is the same,
So,
$\Rightarrow 6 \times (z - y) = 4 \times (z + y)$
$\Rightarrow 6z - 4z = 4y + 6y$
$\Rightarrow 2z = 10y$
$\Rightarrow z = 5y$
Hence, speed of stream = y/5y × 100 = 20% of speed of boat

Q:3 The correct answer is **Option 5** i.e. **Data Insufficient.**
Let, the speed of boat A be x km/hr and, the speed of boat B be y km/hr
Given, distance = 150 km
They are going downstream and the speed of the stream is 5 km/hr
Hence, speed of boat A downstream = $(x + 5)$ km/hr

Speed of boat B downstream = $(y + 5)$ km/hr
As boat A reaches 2 hours before boat B
$\Rightarrow 150/(x + 5) + 2 = 150/(y + 5)$
As there are 2 variables and a single equation. we cannot find the relation between x and y directly
Hence, the given **data is insufficient**.

Q:4 The correct answer is **Option 2** i.e. **2.5 km**
If the speed of a man 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
Speed downstream = $(8 + 2) = 10$ km/hr
Speed upstream = $(8 - 2) = 6$ km/hr
Let the required distance = x km
$\Rightarrow (x/10) + (x/6) = (40/60)$
$\Rightarrow 16x = 40$
$\Rightarrow x = 40/16 = 2.5$ km

Q:5 The correct answer is **Option 4** i.e. **6 min.**
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 of stream of water = 8 km/hr
The swimmer's speed in downstream = $(8 + 7) = 15$ km/hr
Boat's speed in downstream = $(8 + 6) = 14$ km/hr
Both the swimmer and the boat are going in the same direction.
Relative speed = $(15 - 14) = 1$ km/hr
Length of the boat = 100 m
Required time = $(60/1000) \times 100 = 6$ min

Q:6 The correct answer is **option 4** i.e. **4 Hours.**
Speed = distance/time
The actual speed of boat A = $(80 - 8)$ km/hour = 72 km/hour
Distance in 1st hour = 72 km
Now,
Distance between boats A and B = 72 km
Speed of boat B = $(98 - 8)$ km/hour = 90 km/hour
So, the actual speed when both boats start = $(90 - 72)$ km/hour = 18 km/hour
Hence,

Time = 72/18 = 4 hour

Q:7 The correct answer is **Option 2** i.e.
33 meter/minute
Suppose the speed of boat in still water and speed of current are 'B' and 'C' respectively.
So, Downstream speed = $(B + C)$
Upstream speed = $(B - C)$
Distance = 225 m
Time = 4 minute 10 seconds = 250 seconds
So, $(B + C)$ = 225/250 = 0.9 m/s
Distance = 225 m
Time = 18 minute 45 seconds = 1125 seconds
So, $(B - C)$ = 225/1125 = 0.2 m/s
From both equations:
B = 0.55 m/s = 33 meter/minute
Hence, Speed of boat in still water = 33 meter/minute

Q:8 The correct answer is **option 3** i.e. **105 meter**
The relative speed = $(29 - 5) + (25 + 5)$ = 24 + 30 = 54 km/hr
in m/s = 54 × 5/18 = 15 m/s
Now,
Speed = Distance/time
⇒ 15 = d/7
⇒ d = 105 m
Hence, initial distance = 105 m

Q:9 The correct answer is **Option 2** i.e. **3 hours**
If the speed downstream is a km/hr and the speed upstream is b km/hr, then:
Rate of stream = ½(a - b) km/hr
Speed in still water = $(1/2)(a + b)$ km/hr
as given in the question, b = $(15/5)$ = 3 km/hr
then, 0.5 × $(a - 3)$ = $(1/4)$ × 0.5 × $(a + 3)$
⇒ 4a - 12 = a + 3
⇒ a = 5 km/hr
Time required to sail 15 km downstream = $(15/5)$ = 3 hours

Q:10 The correct answer is **option 2** i.e. **30 km**
Let, The distance be D km
now,
Speed of the boat upstream = 10 kmph
Speed of the boat downstream = 15 kmph

⇒ D/10 - D/15 = 1
⇒ D$(1/10 - 1/15)$ = 1
⇒ D$(1/30)$ = 1
⇒ D = 30 km
Hence, Distance from point A to the bridge is **30 km**.