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Date Interpretation Mixed Chart Questions Quiz for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains, IBPS Clerk Mains and IBPS RRB Exams.

Data Interpretation Mixed Chart Quiz 16

Direction: Study the following table and line chart carefully and answer the questions based on it.

The table shows the distance travelled by five different boats upstream and downstream in same time and the line chart shows the speed of stream

Boat	Distance (Upstream)	Distance (Downstream)
P	96	288
Q	120	240
R	100	220
S	150	350
T	180	540
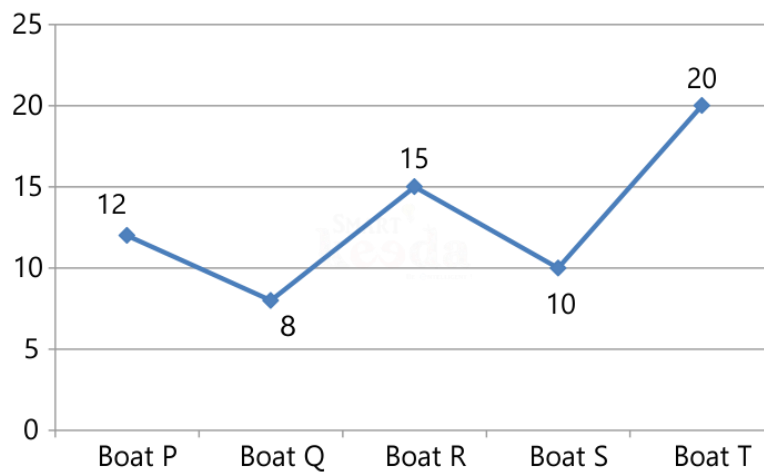
1. Find the ratio of the speed of Boats P and Q together in still water to the speed of Boats S and T together in still water.

A. 25 : 32   B. 27 : 19   C. 24 : 39   D. 65 : 48   E. None of these

2. If the speed of Boat R in still water is increased by 10% and the speed of stream is increased by 20%, Find the time taken by Boat R to cover the distance of 91 km upstream.

A. 3.5 hours   B. 4 hours   C. 6 hours   D. 2.5 hours   E. None of these

3. The distance between point A and point B is 210 km. Boat T travels from point A to B and comes back. What is the time taken by Boat T to cover the total distance.

A. 10 hours   B. 12.5 hours   C. 14 hours   D. 20 hours   E. 8 hours

4. The ratio of the speeds of the Boat Q to the Boat U in still water is 4 : 5. If the Boat U travels 126 km distance downstream and 81 km distance upstream in 7 hours 30 minutes, What is the speed of stream of Boat U?

A. 15 km/h   B. 10 km/h   C. 20 km/h   D. 12 km/h   E. None of these

5. The speed of Boat Q and S in still water together is approximately how much percentage more than the speed of stream of the same boats together?

A. 70%   B. 120%   C. 170%   D. 80%   E. 270%

Correct Answers:

1	2	3	4	5
E	A	C	D	C

Common Explanations:

Speed of Boat P in still water = a km/h

$$\frac{96}{(a - 12)} = \frac{288}{(a + 12)}$$

96 (a + 12) = 288 (a − 12)
96a + 1152 = 288a − 3456
3456 + 1152 = 288a − 96a
a = 24 km/h

Speed of Boat Q in still water = b km/h

$$\frac{120}{(b - 8)} = \frac{240}{(b + 8)}$$

120 (b + 8) = 240 (b − 8)
120b + 960 = 240b − 1920
1920 + 960 = 240b − 120b
b = 24 km/h

Speed of Boat R in still water = c km/h

$$\frac{100}{(c - 15)} = \frac{220}{(c + 15)}$$

100 (c + 15) = 220 (c − 15)
100c + 1500 = 220c − 3300
3300 + 1500 = 220c − 100c
c = 40 km/h

Speed of Boat S in still water = d km/h

$$\frac{150}{(d - 10)} = \frac{350}{(d + 10)}$$

150 (d + 10) = 350 (d − 10)
150d + 1500 = 350d − 3500
3500 + 1500 = 350d − 150d
d = 25 km/h

Speed of Boat T in still water = e km/h

$$\frac{180}{(e - 20)} = \frac{540}{(e + 20)}$$

180 (e + 20) = 540 (e − 20)
180e + 3600 = 540e − 10800
10800 + 3600 = 540e − 180e
e = 40 km/h

1. Ratio = (24 + 24) : (25 + 40) = 48 : 65

Hence, option E is correct.

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2. Speed of Boat R in still water = 40 × 110% = 44 km/h

Speed of stream = 15 × 120% = 18 km/h

Time taken by Boat R to cover the distance of 91 km upstream = 91/ (44 − 18) = 91/ 26 = 3.5 hours

Hence, option A is correct.

3.

$$\text{Total time} = \frac{210}{(40 - 20)} + \frac{210}{(40 + 20)}$$

$$= \frac{210}{20} + \frac{210}{60}$$

$$= 10.5 + 3.5 = 14 \text{ hours}$$

Hence, option C is correct.

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4. Speed of the Boat Q in still water = 24 km/h

Speed of the Boat U in still water = $\frac{24}{4}$ × 5 = 30 km/h

Let the speed of stream = x km/h

According to the question,

$$\frac{126}{(30 + x)} + \frac{81}{(30 - x)} = \frac{15}{2}$$

$$\frac{126 (30 - x) + 81 (30 + x)}{(900 - x^2)} = \frac{15}{2}$$

2 (3780 − 126x + 2430 + 81x) = 15 (900 − x²)
2 (6210 − 45x) = 13500 − 15x²
12420 − 90x = 13500 − 15x²
15x² − 90x − 1080 = 0
x² − 6x − 72 = 0
x² − 12x + 6x − 72 = 0
x (x − 12) + 6 (x − 12) = 0
(x + 6) (x − 12) = 0
x = −6, 12
Speed of stream = 12 km/h
Hence, option D is correct.

5. According to the question,

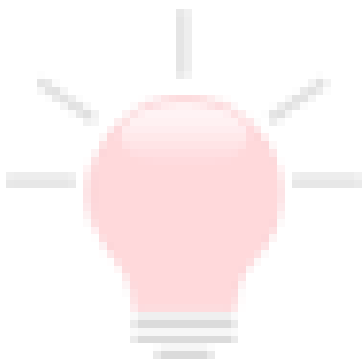Speed of Boat Q and S in still water together = (25 + 24) = 49 km/h
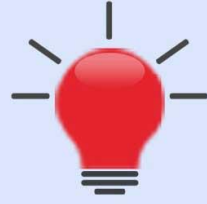
Speed of stream of Boat Q and S together = 18 km/h

% more = $\dfrac{49 - 18}{18} \times 100$

$= \dfrac{31}{18} \times 100 = 172.22\% \approx 170\%$

Hence, option C is correct.