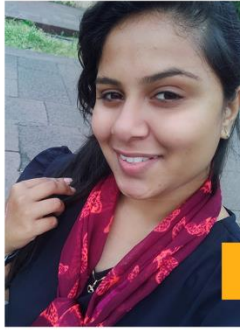


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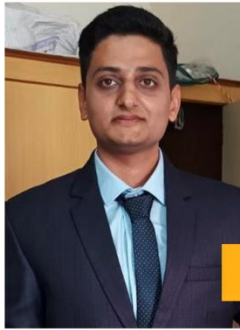
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DI Info Chart Questions for RBI Assistant Mains, SBI Clerk Mains and IBPS Clerk Mains Exams.

DI Info Chart No 45

Directions: Study the following information carefully and answer the questions given beside.

Two trains A and B running at speeds 42 km/hr and 48 km/hr respectively are approaching each other. They are [A] km far from each other. After 12 minutes, a vulture starts flying from train A towards train B at the speed of [B] km/hr. It reverses its direction as soon as it reached B and starts flying towards A and continues this until trains A and B meet. The total distance covered by it is [C] km. The vulture meets train B (first time) in half the time train A meets train B (from the time vulture started). The distance between the points where train B meets vulture for the first time and train B meets train A is 72 km. The distance between trains A and B, when the vulture meets train B for the second time is [D].

1. What should come in place of A?

- A. 180 km B. 270 km C. 288 km D. 225 km E. 305 km

2. What will come in place of B?

- A. 115 B. 145 C. 84 D. 96 E. 132

3. What should come in place of C?

- A. 288 km B. 340 km C. 270 km D. 396 km E. Can't be determined

4. What should come in place of D?

- A. 20.4 km B. 32.6 km C. 7.4 km D. 56.3 km E. 16.5 km

Correct Answers:

1	2	3	4
C	E	D	B



Explanations :

1. Let speed of vulture be a km/hr

Relative speed of A and B = $(42 + 48) = 90$ km/hr

Relative speed of vulture and B (when vulture approaches B) = $a + 48$

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a} \right]$$

$$180 = 48 + a$$

$$a = 132 \text{ km/hr (Blank B)}$$

Distance between B's meeting point with vulture and A is 72

$$\text{Time taken by B} = \frac{72}{48} = 1.5 \text{ hours}$$

This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts

So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours

$$\text{Hence total meeting time} = 3 + \frac{12}{60} = 3.2 \text{ hours}$$

$$\text{Distance (blank A)} = 3.2 \times (48 + 42) = 288 \text{ km}$$

Hence, option C is correct.

2. Let speed of vulture be a km/hr

Relative speed of A and B = $(42 + 48) = 90$ km/hr

Relative speed of vulture and B (when vulture approaches B) = $a + 48$

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a} \right]$$

$$180 = 48 + a$$

$$a = 132 \text{ km/hr (Blank B)}$$

Hence, option E is correct.

3. Let speed of vulture be a km/hr

Relative speed of A and B = $(42 + 48) = 90$ km/hr

Relative speed of vulture and B (when vulture approaches B) = $a + 48$

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a} \right]$$

$$180 = 48 + a$$

$$a = 132 \text{ km/hr (Blank B)}$$

Distance between B's meeting point with vulture and A is 72

$$\text{Time taken by B} = \frac{72}{48} = 1.5 \text{ hours}$$

This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts

So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours

Distance travelled by vulture = $132 \times 3 = 396$ km (Blank C)

Hence, option D is correct.

4. Let speed of vulture be a km/hr

Relative speed of A and B = $(42 + 48) = 90$ km/hr

Relative speed of vulture and B (when vulture approaches B) = $a + 48$

Given: Vulture reaches B in half time as A from the point vulture starts

Let x be the distance travelled

$$\frac{x}{90} = 2 \times \left[\frac{x}{48 + a} \right]$$

$$180 = 48 + a$$

$a = 132 \text{ km/hr}$ (Blank B)

Distance between B's meeting point with vulture and A is 72

Time taken by B = $\frac{72}{48} = 1.5$ hours

This 1.5 hour will be half the time as Vulture reaches B in half time as A from the point vulture starts

So, total times for A to meet B (from the point when Vulture started) = $2 \times 1.5 = 3$ hours

Distance travelled by vulture = $132 \times 3 = 396 \text{ km}$ (Blank C)

Distance between A and B (when vulture starts) = $3 \times (48 + 42) = 270 \text{ km}$

Vulture meets B in 1.5 hours (given)

Distance between A and B when Vulture meets B for the first time = $(3 - 1.5) \times (48 + 42) = 135$

Time taken by Vulture to reach till A

$$= \frac{135}{132 + 42} = \frac{45}{58} \text{ hours}$$

Distance between A and B when Vulture meets A (after return)

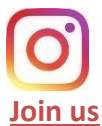
$$= 135 - \frac{45}{58} \times 90 = 65.2 \text{ km}$$

Time taken for vulture to travel 65.2 (to meet B for second time)

$$= \frac{65.2}{180} = \frac{163}{450} \text{ hours}$$

$$\text{Distance (Blank D)} = 65.2 - \frac{163}{450} \times 90 = 32.6 \text{ km}$$

Hence, option B is correct.





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