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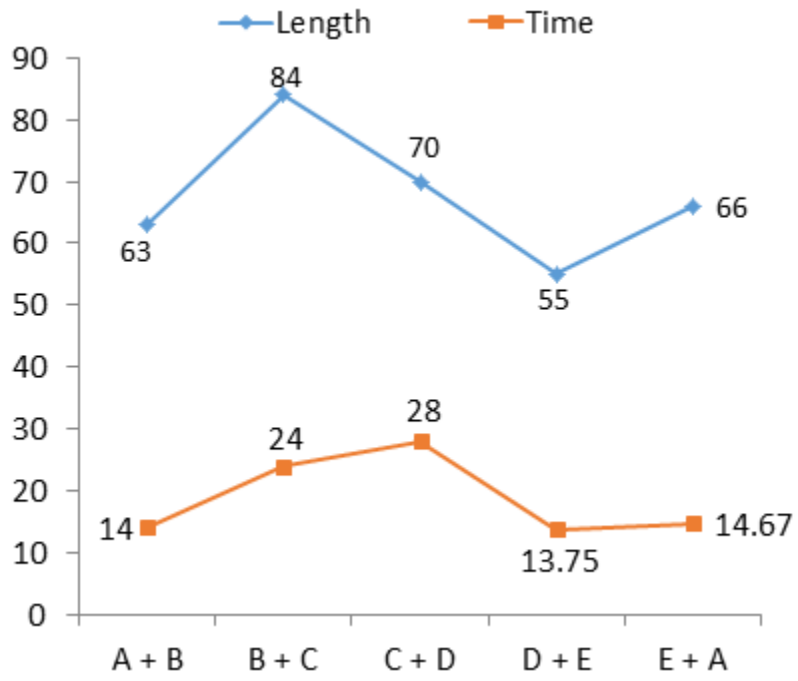
Date Interpretation Line Chart Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams

DI Line Chart Quiz 27

Direction : Study the following line graph carefully to answer the questions that follow.

Below the pair of five trains are given. The sum of length of each pair and the time taken to cross each other when travelling in opposite direction of each pair is given in the line graph.

Length (in decametre) and Time (in sec) taken to cross each other when travelling to opposite direction



1. Find the time taken by train B and train D to cross each other if both are travelling in opposite direction.

A. 13 sec B. 15 sec C. 18 sec D. 10 sec E. 16 sec

2. Find the time taken by train A to pass train C if they are travelling in the same direction.

A. 85 sec B. 76 sec C. 81 sec D. 88 sec E. 92 sec

3. If train E crosses a platform of certain length in 49.6 seconds then find the time taken by train D to cross the same platform.

A. 96.4 sec B. 84.5 sec C. 67.67 sec D. 71.33 sec E. 86.67 sec

4. Train A was travelling from Patna to Delhi while train D was travelling from Delhi to Patna. Train A started after 2 hours of train D. If both trains meet at a distance of 405 km from Delhi then find the distance between Patna to Delhi.

A. 900 km B. 840 km C. 920 km D. 760 km E. 860 km

5. Train B and train C were travelling from station X to station Y which is 432 km apart. If both reached the station Y at the same time then find after how much time of train C, would train B leaved station X?

A. 8 hours B. 6.2 hours C. 6.4 hours D. 7.6 hours E. 7.2 hours

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Correct Answers:

1	2	3	4	5
A	C	D	A	E

Explanations:

1. Let, length (in metres) of train A, train B, train C, train D, and train E be 'a', 'b', 'c', 'd', and 'e', respectively.

And, speed (in m/s) of train A, train B, train C, train D, and train E be 'p', 'q', 'r', 's', and 't', respectively.

$2 \times (a + b + c + d + e) = 3380$
$\Rightarrow 2 \times (630 + 700 + e) = 3380$
$\Rightarrow e = 360$ m
$a = 660 - 360 = 300$ m
$b = 630 - 300 = 330$ m
$c = 840 - 330 = 510$ m
$d = 700 - 510 = 190$ m

Also, $\frac{a + b}{p + q} = 14$

$\Rightarrow \frac{630}{p + q} = 14$

$\Rightarrow p + q = 45$

$\frac{b + c}{q + r} = 24$

$\Rightarrow \frac{840}{q + r} = 24$

$\Rightarrow q + r = 35$

Similarly,
$r + s = 25$
$s + t = 40$
$p + t = 45$

So, $2 \times (p + q + r + s + t) = 190$
$\Rightarrow p + q + r + s + t = 85$
$\Rightarrow 45 + r + 40 = 95$
$\Rightarrow r = 10$

So, $s = 15$, $t = 25$, $p = 20$, $q = 25$

	Length (in metres)	Speed (in m/s)
Train A	300 m	20 m/s
Train B	330 m	25 m/s
Train C	510 m	10 m/s
Train D	190 m	15 m/s
Train E	360 m	25 m/s

Reqd. time $= \frac{330 + 190}{25 + 15} = 13$ sec.

Hence, option A is correct.

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2. Let, length (in metres) of train A, train B, train C, train D, and train E be 'a', 'b', 'c', 'd', and 'e', respectively.

And, speed (in m/s) of train A, train B, train C, train D, and train E be 'p', 'q', 'r', 's', and 't', respectively.

$2 \times (a + b + c + d + e) = 3380$
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	Length (in metres)	Speed (in m/s)
Train A	300 m	20 m/s
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Train D	190 m	15 m/s
Train E	360 m	25 m/s

Reqd. time $= \frac{300 + 510}{20 - 10} = \frac{810}{10} = 81$ sec

Hence, option C is correct.

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3. Let, length (in metres) of train A, train B, train C, train D, and train E be 'a', 'b', 'c', 'd', and 'e', respectively.

And, speed (in m/s) of train A, train B, train C, train D, and train E be 'p', 'q', 'r', 's', and 't', respectively.

$2 \times (a + b + c + d + e) = 3380$

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$\Rightarrow e = 360$ m

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Similarly,

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So, $2 \times (p + q + r + s + t) = 190$

$\Rightarrow p + q + r + s + t = 85$

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$r = 10$

So, $s = 15$, $t = 25$, $p = 20$, $q = 25$

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Train A	300 m	20 m/s
Train B	330 m	25 m/s
Train C	510 m	10 m/s
Train D	190 m	15 m/s
Train E	360 m	25 m/s

Let, length of platform = 'x' m

So, $\frac{360 + x}{25} = 49.6$

$\Rightarrow 360 + x = 1240$

$\Rightarrow x = 1240 - 360$

$\Rightarrow x = 880$

So, time taken by D = $\frac{880 + 190}{15} = 71.33$ sec

Hence, option D is correct.

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4. Let, length (in metres) of train A, train B, train C, train D, and train E be 'a', 'b', 'c', 'd', and 'e', respectively.

And, speed (in m/s) of train A, train B, train C, train D, and train E be 'p', 'q', 'r', 's', and 't', respectively.

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So, $s = 15$, $t = 25$, $p = 20$, $q = 25$

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Train A	300 m	20 m/s
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Train C	510 m	10 m/s
Train D	190 m	15 m/s
Train E	360 m	25 m/s

Speed of train D $= 15 \times \frac{18}{5} = 54$ km/h

Speed of train A $= 25 \times \frac{18}{5} = 90$ km/h

Time taken by train D to travel 405 km $= \frac{405}{54} = 7.5$ hr

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Distance travelled by train A to meet train D = 90 × 5.5 = 495 km (We have multiplied by 5.5 as train A travelled 2 hrs less than train D)

Required distance = 405 + 495 = 900 km
Hence, option A is correct

5. Let, length (in metres) of train A, train B, train C, train D, and train E be 'a', 'b', 'c', 'd', and 'e', respectively.

And, speed (in m/s) of train A, train B, train C, train D, and train E be 'p', 'q', 'r', 's', and 't', respectively.

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	Length (in metres)	Speed (in m/s)
Train A	300 m	20 m/s
Train B	330 m	25 m/s
Train C	510 m	10 m/s
Train D	190 m	15 m/s
Train E	360 m	25 m/s

Speed of train B = $25 \times \frac{18}{5}$ = 90 km/h

Speed of train C = $10 \times \frac{18}{5}$ = 36 km/h

Time taken by train C = $\frac{432}{36}$ = 12 hours

Time taken by train B = $\frac{432}{90}$ = 4.8 hours

So, train B would leave the station X after 7.2 hours of train C.

Hence, option E is correct.

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