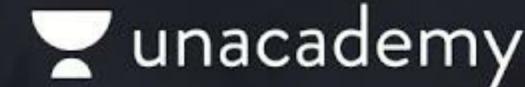


GATE 2021

GENERAL APTITUDE

धमाकेदार ट्रिक के साथ 🔥🔥

{TIME, SPEED & DISTANCE, -2}
MEETING POINT CONCEPT}



AVINASH SIR

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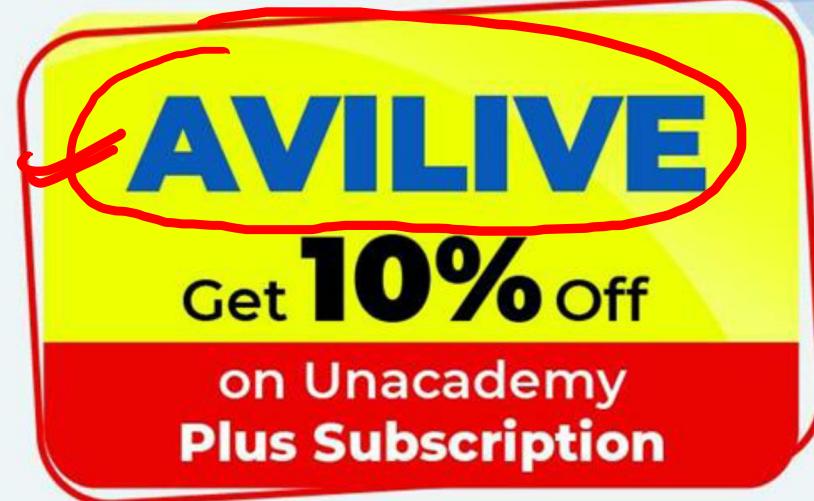
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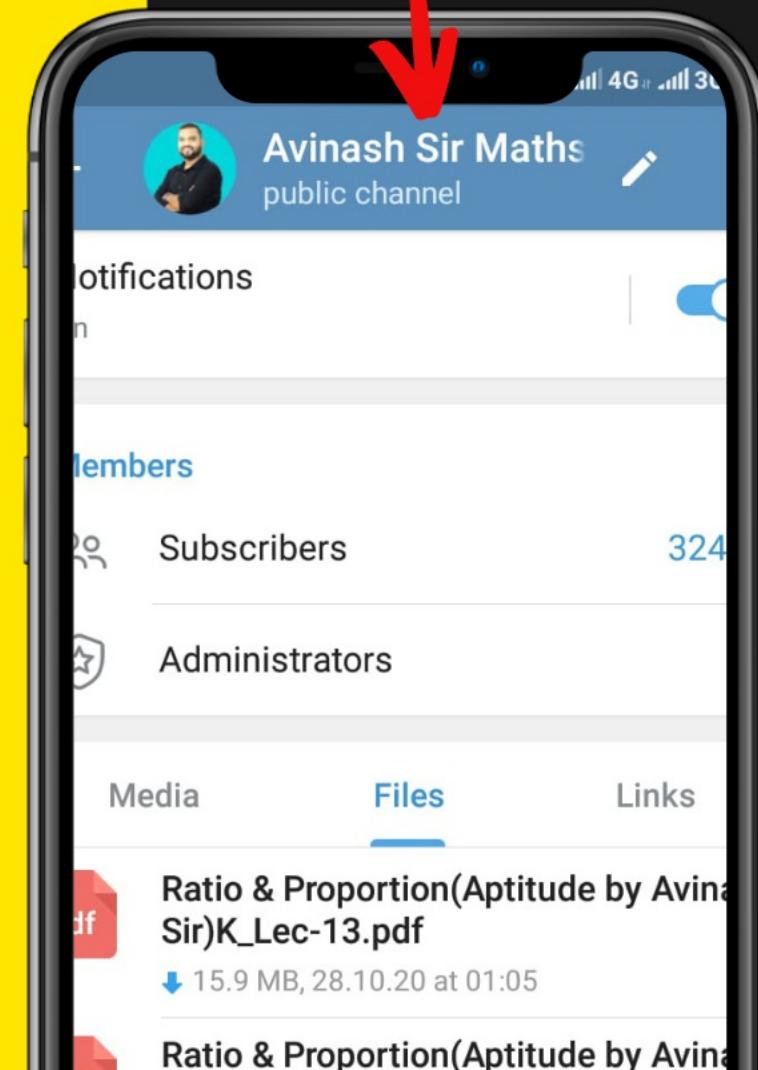


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✓ Home Work Question

Two persons cover the same distance at speed of 25 km/h and 30 km/h respectively. Find the distance travelled if one person takes 25 minute more than the other.

A) 61.5 km

B) 60.5 km

C) 63.5 km

D) 62.5 km

$$\frac{T_1}{T_2} = \frac{S_2}{S_1} = \frac{30}{25} = \left(\frac{6}{5} \right)$$

$\xrightarrow[125 \text{ min}]{1 \text{ min} \rightarrow 25}$

$D = \text{Constant}$

$$\frac{S_1}{S_2} = \frac{T_2}{T_1}$$

$$D = 25 \times \frac{150}{60}$$

$$D = 30 \times \frac{125}{60}$$

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Home Work Question

The ratio between the speed of Hemant and Nitish is 6: 7. If Hemant takes 30 minutes more than Nitish to cover a distance. Find the actual time taken by Hemant and Nitish?

- (A) 120 min & 180 min
- (B) 180 min & 120 min
- (C) 210 min & 180 min
- (D) 180 min & 210 min

D = Constant

$$\frac{T_2}{T_1} = \frac{S_1}{S_2} = \frac{6}{7}$$

$$\frac{T_1}{T_2} = \frac{7}{6}$$

For 180 min θ 210 min
1 unit = 30 min

$$\frac{T_1}{T_2} = \frac{S_2}{S_1}$$

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Today's Class Agenda

➤ Meeting Point Concept

➤ Practice questions based on Meeting Point

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~~D = Constant~~

$\hookrightarrow D = \text{constant}$

$$\hookrightarrow S \propto \frac{1}{T}$$

$$\boxed{\frac{S_1}{S_2} = \frac{T_2}{T_1}}$$

$$S = \frac{D}{T}$$

~~T = Constant~~

$\hookrightarrow S \propto D$

$$\boxed{\frac{S_1}{S_2} = \frac{D_1}{D_2}}$$

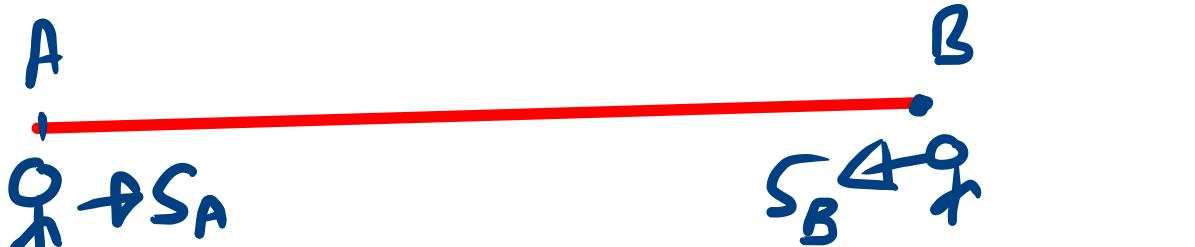
$S = \text{constant}$

$\hookrightarrow D \propto T$

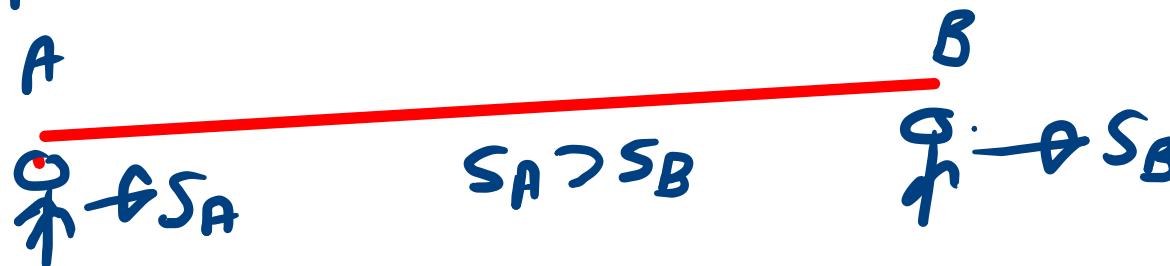
$$\boxed{\frac{D_1}{D_2} = \frac{T_1}{T_2}}$$

Meeting Point Concept

CASE I



CASE II



CASE III

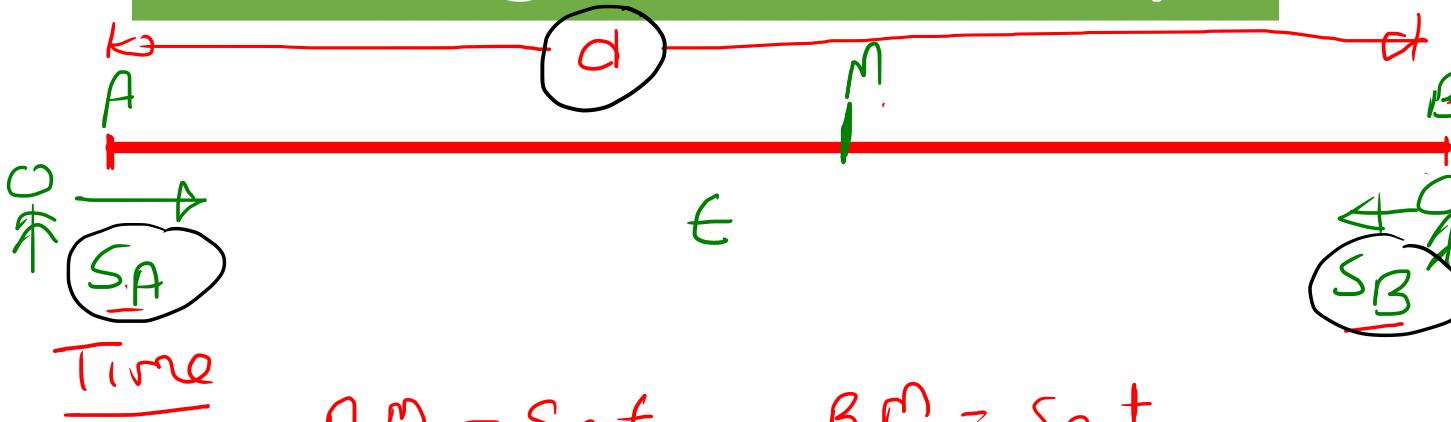
Race

A $\rightarrow S_A$
B $\rightarrow S_B$

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Meeting Point Concept

CASE I



$$AM = s_A t, \quad BN = s_B t$$

$$AB = AM + BN \Rightarrow d = s_A t + s_B t$$

$$t(s_A + s_B) = d$$

$$t = \frac{d}{s_A + s_B}$$

Relative Speed

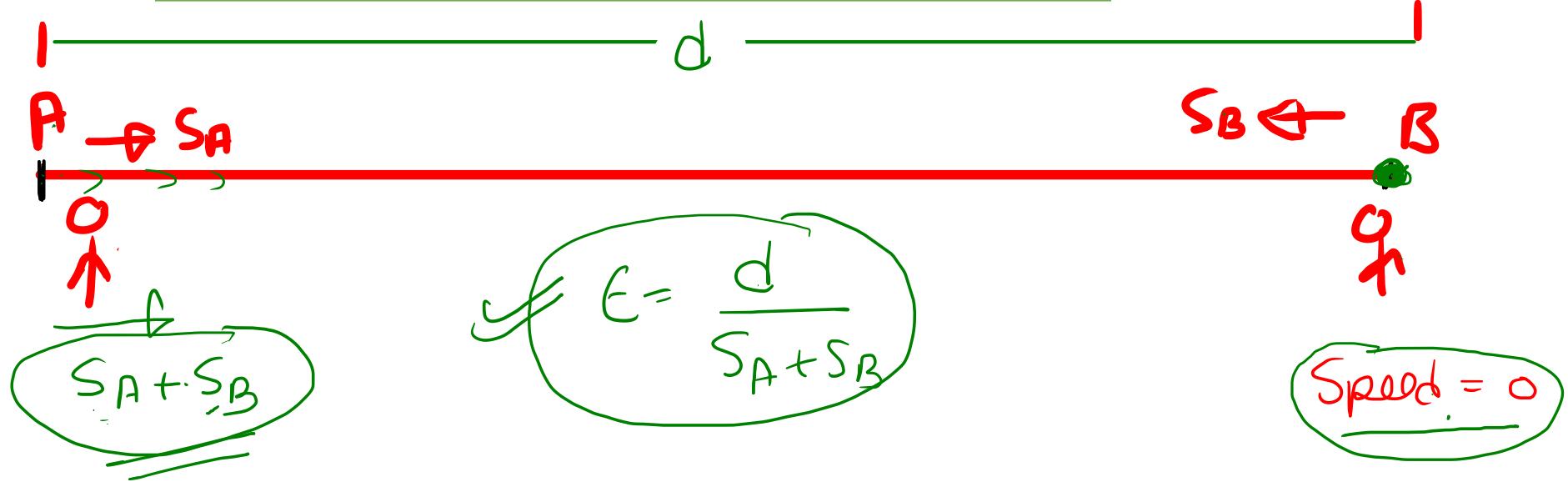
$$S = \frac{D}{T}$$

$$T = \text{Constant}$$

$$S \propto D$$

$$\frac{s_1}{s_2} = \frac{D_1}{D_2}$$

Meeting Point Concept



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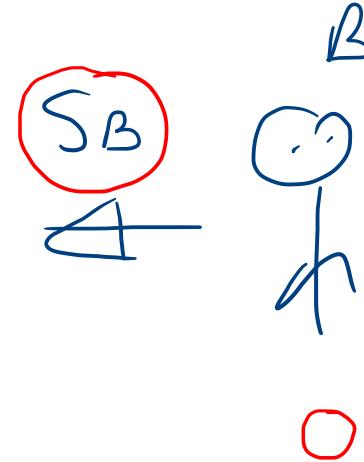
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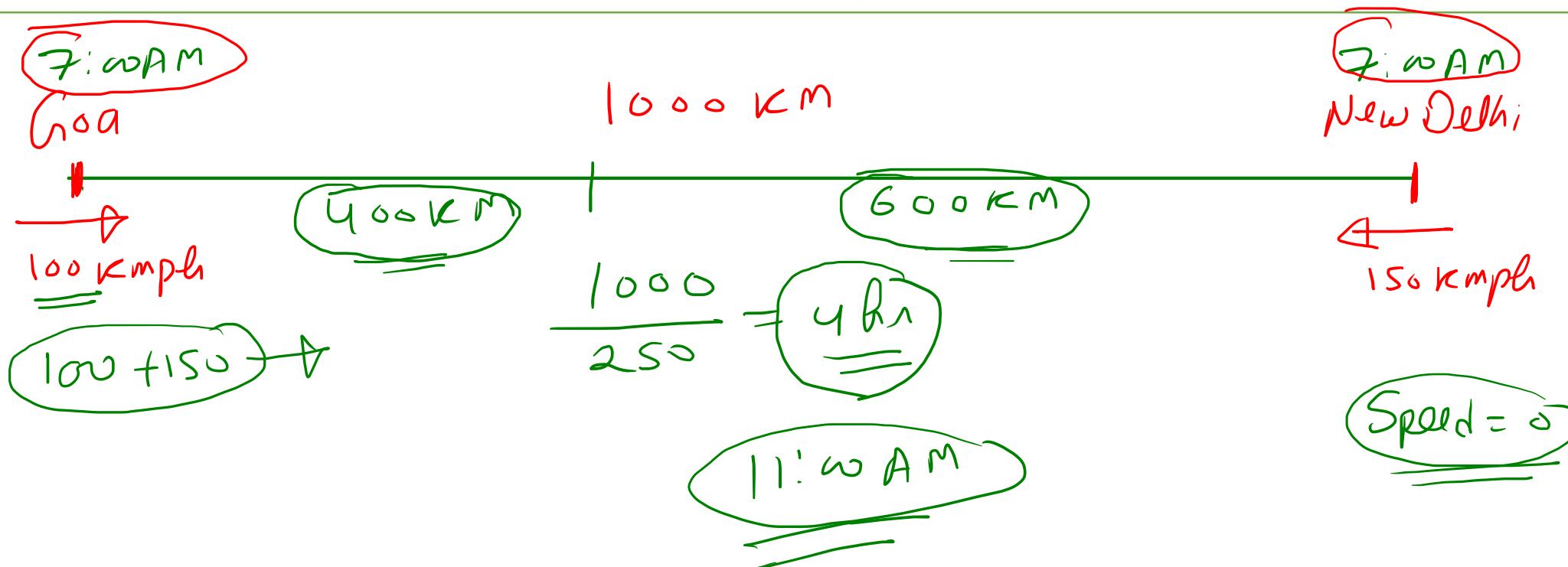


A blue oval contains the text $S_A + S_B$. Two red lines extend downwards from the bottom of the oval.





1) Two trains start at the same time(7:00 AM) from Goa and New Delhi, proceed toward each other at the rate of 100 km/h and 150 km/h respectively and distance between Goa and New Delhi is 1000 km. find the time when they will meet?

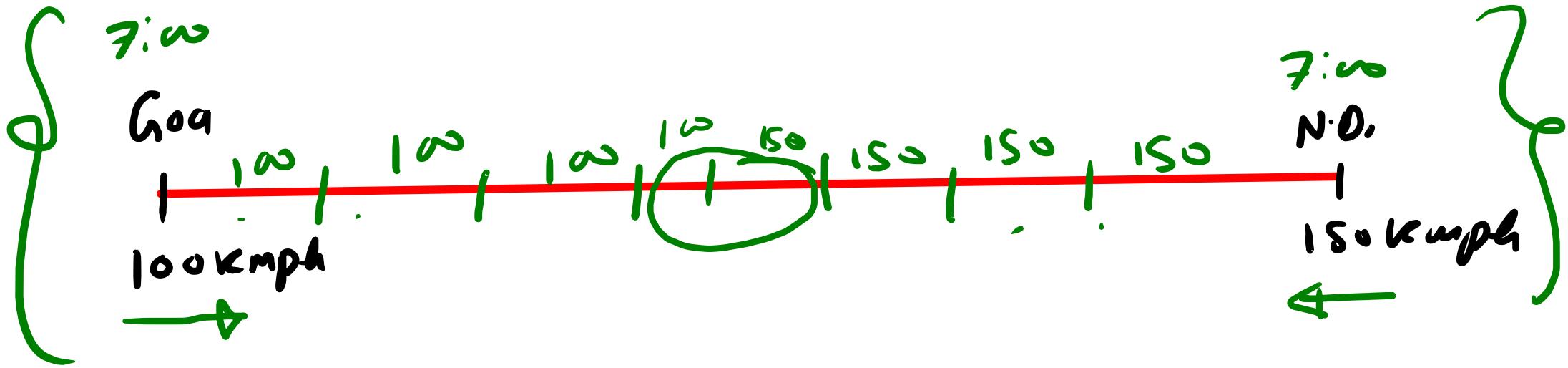


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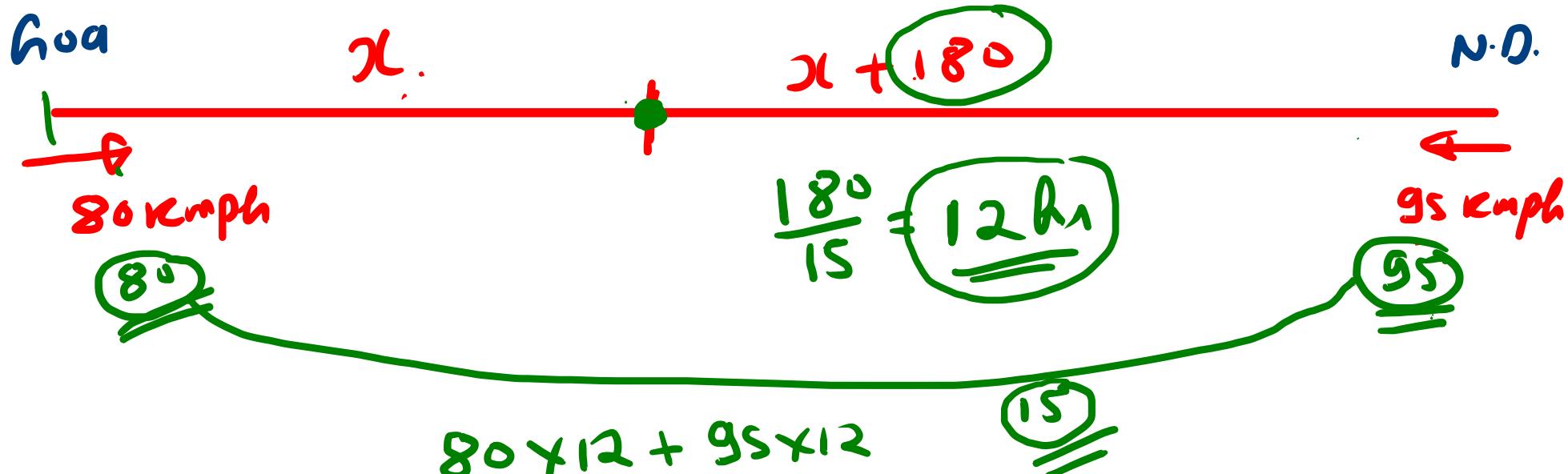
2) Two trains start at the same time from Goa and New Delhi, proceed toward each other at the rate of 80 km/h and 95 km/h respectively. When they meet, it is found that one train has travelled 180 km more than other. Find the distance between Goa and New Delhi.

A) 1800 km

B) 2000 km

C) 2100 km

D) 960 km



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3) Two cars start at the same time from the same location and go in the same direction. The speed of the first car is 50 km/h and the speed of the second car is 60 km/h. The number of hours it takes for the distance between the two cars to be 20 km is ____.

A) 1

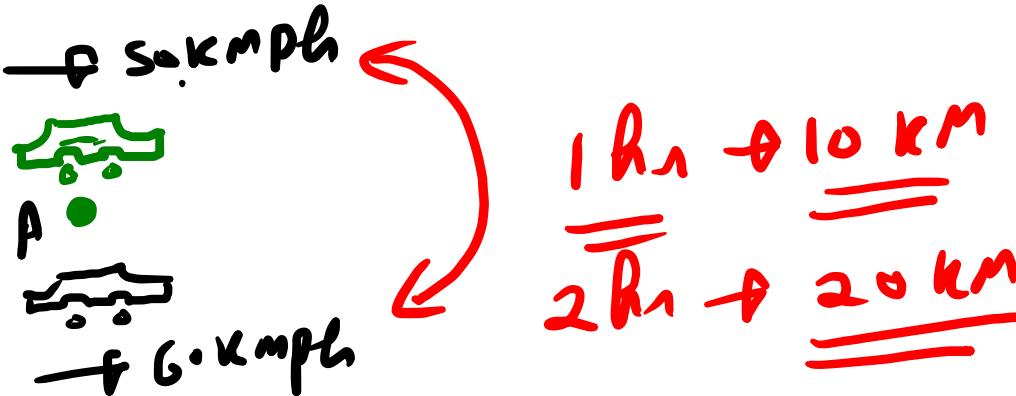
B) 2

C) 3

D) 6

[GATE 2019]

200km



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4) Alia and Ranbir started simultaneously in opposite directions from home P and Q respectively. Each of them run towards starting point of other. After crossing each other, Alia and Ranbir took 40 minutes and 90 minutes respectively to reach their destinations. Find the time taken by them to meet each other.

- A) 65 min
- B) 90 min
- C) 135 min
- D) NOTA

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- 5) Train A starts its journey from Bhilai to New Delhi while train B starts from New Delhi to Bhilai. After crossing each other they finish their journey in 81 hours and 121 hours respectively. Then what will be speed of train B if train A speed is 44 km/h?
- A) 44 km/h B) 55 km/h C) 36 km/h D) 46 km/h

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~~Home Work Question~~

Two trains Started at 7 AM from the same point. The first train travelled north at a speed of 80km/h and the second train travelled south at a speed of 100 km/h. The time at which they were 540 km apart is _____ AM.

- A) 9
- B) 10
- C) 11
- D) 11.30

[GATE 2019]

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Wed

Saturday

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3: \rightarrow Previous
5: \rightarrow Reasoning

6: \rightarrow Seating Arrangement

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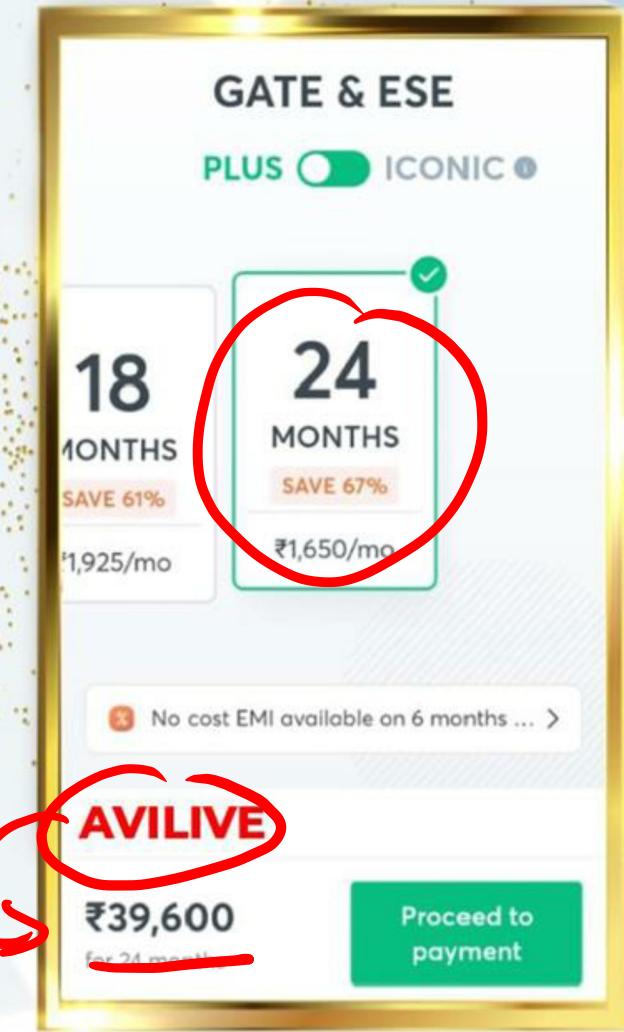
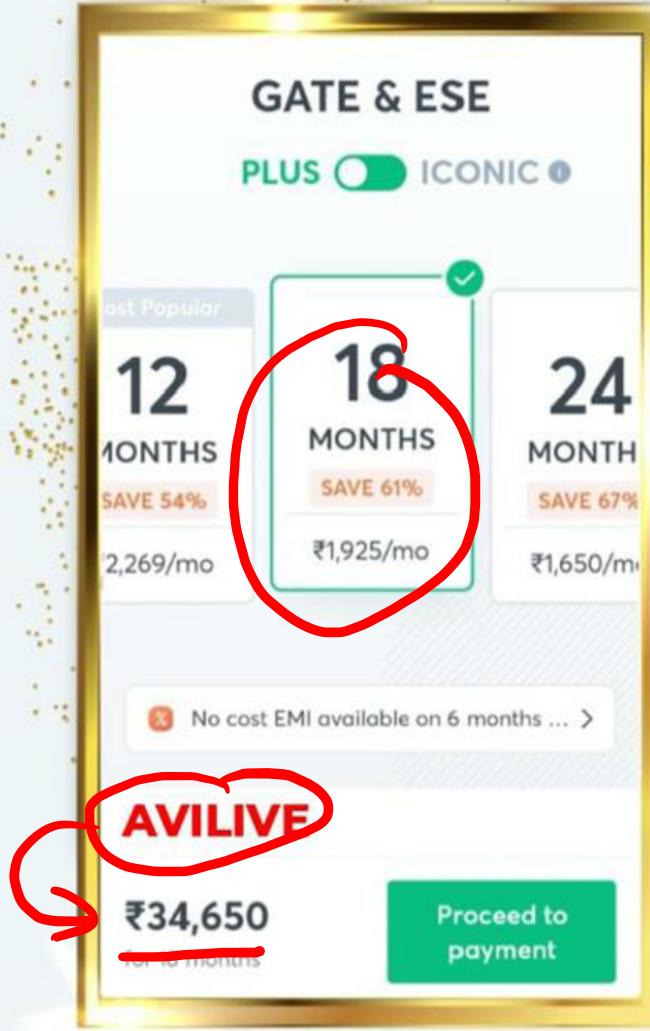
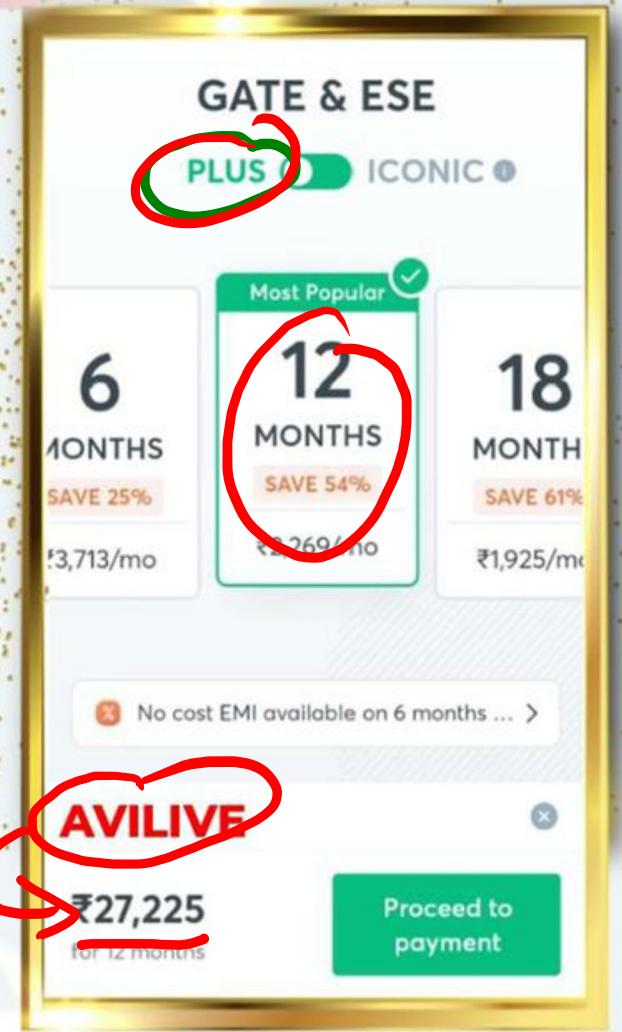
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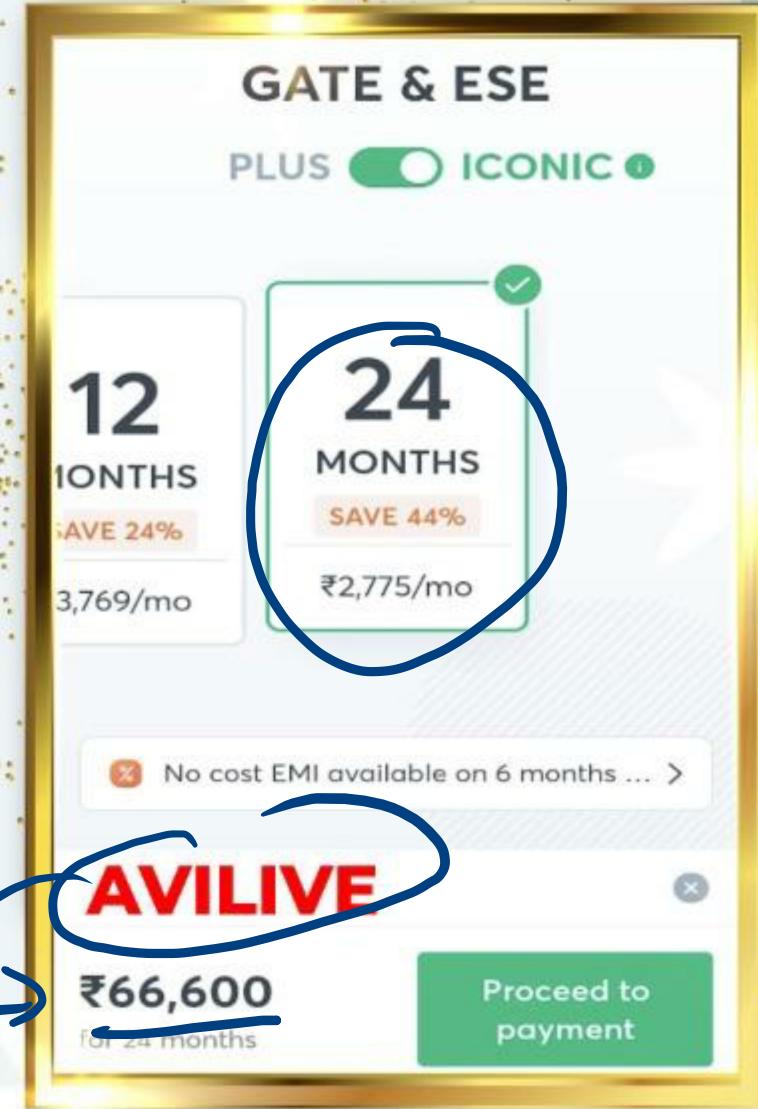
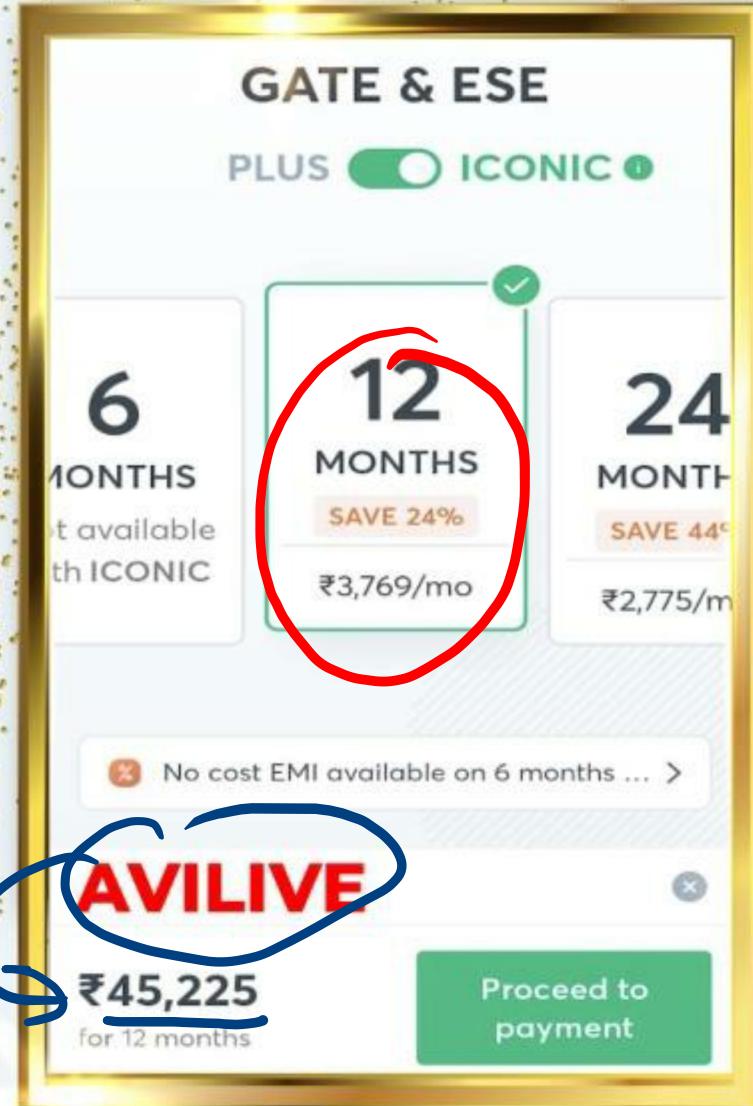
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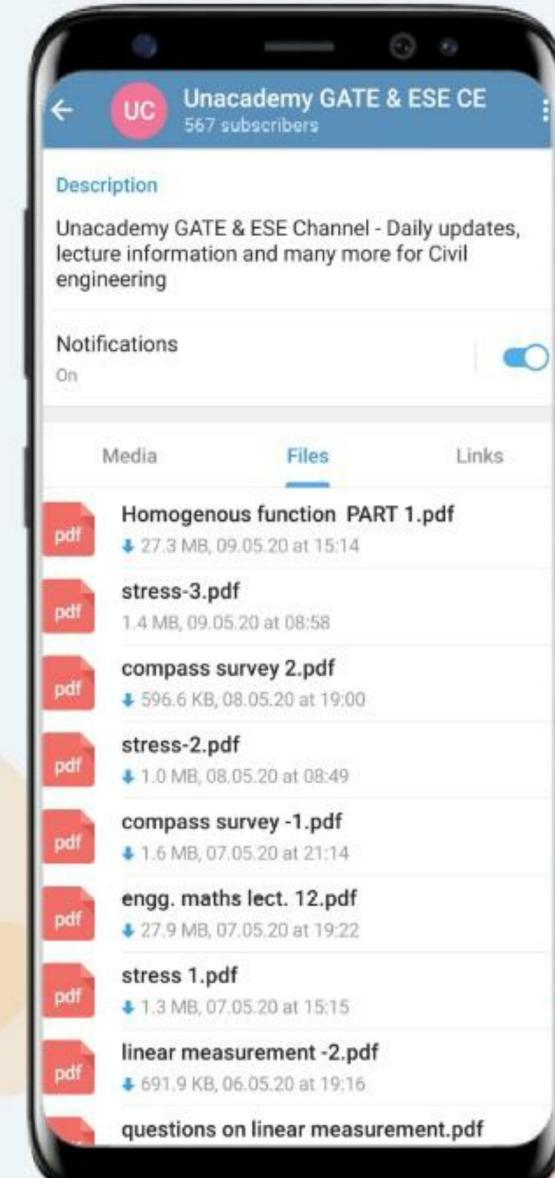
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