

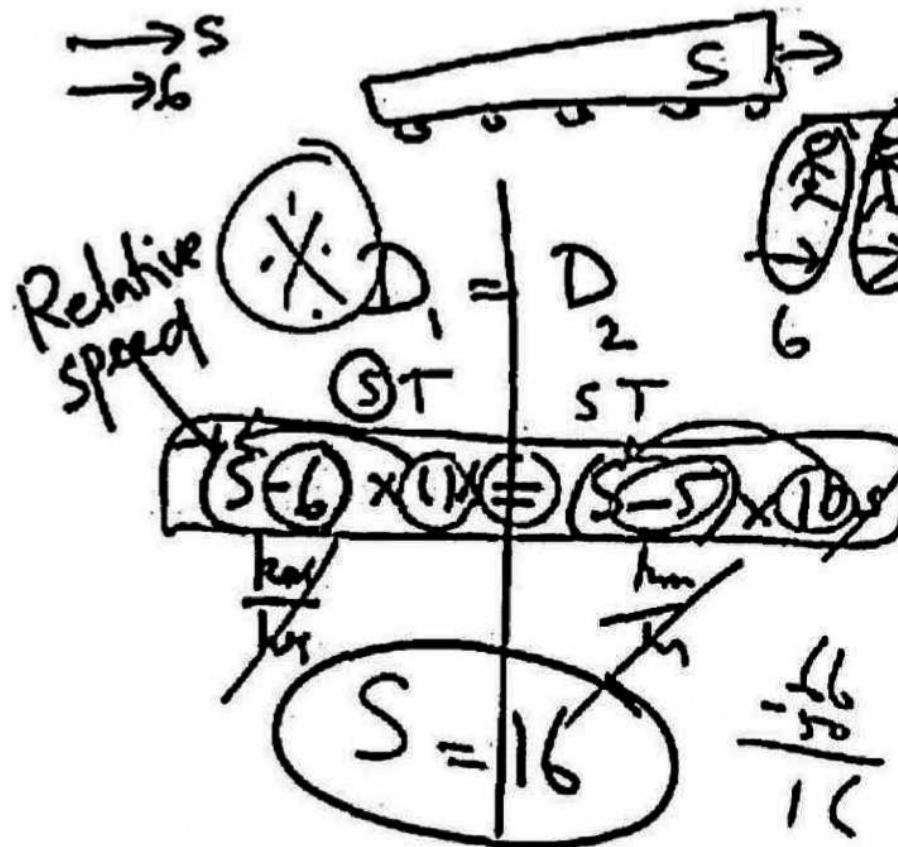
**SET-3**

Relative  
Speed

**TRAIN passing  
moving objects/persons**

**TYPE**

①



A train takes 11 seconds and 10 seconds to cross 2 men who are walking in the same direction of the train at the speed of 6 km/hr and 5 km/hr respectively. Find the speed of the train.

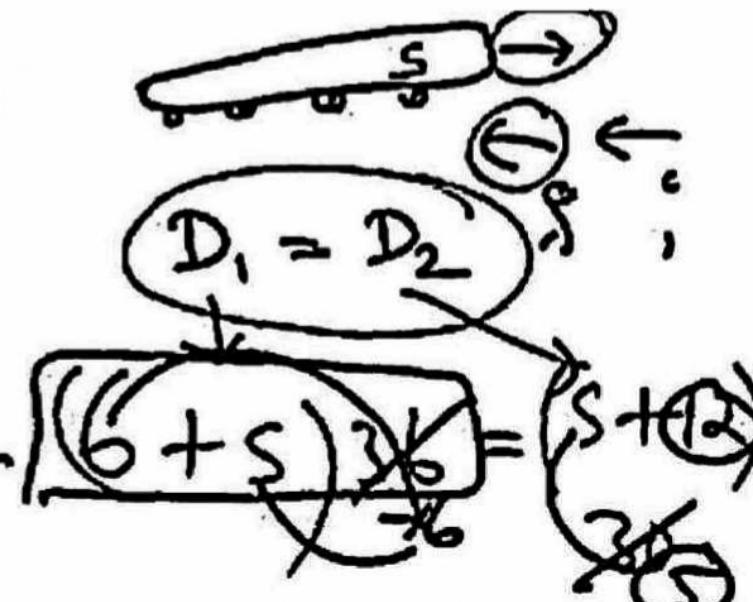
1. 16 km/hr
2. 200 km/hr
3. 18 km/hr
4. 17 km/hr

2

$$D =$$

$$(6 + 24) \text{ km} \times 36 \text{ s}$$

$$\frac{30}{18} \times 5 \times 36 \times 2$$



$$S = 60 - 36$$

$$S = 24 \text{ kmph}$$

A train overtakes two boys who are walking in the opposite direction in which the train is going at the rate of 6 km/h and 12 km/h and passes them completely in 36 seconds and 30 seconds respectively. What is the length of the train (in metres)?

View solution

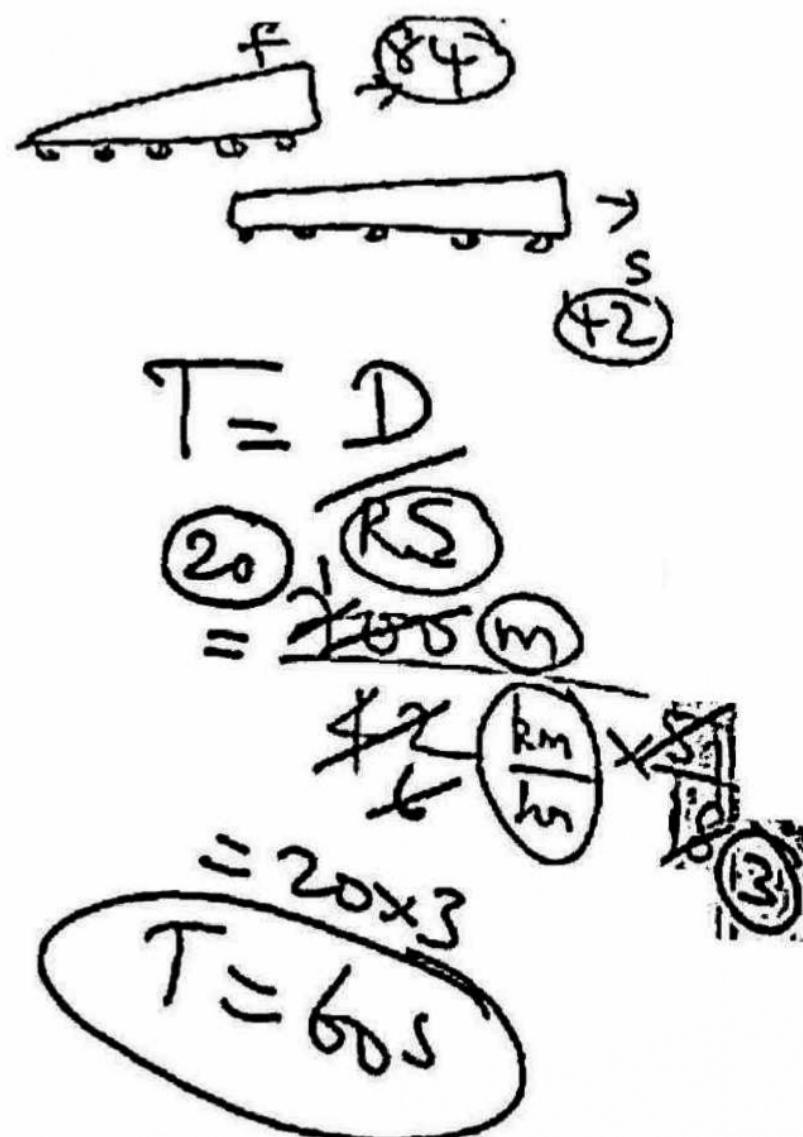
A. 120 m

OPP  $\rightarrow +$   
Same  $\rightarrow -$

B. 300 m

C. 140 m

③



Two trains are moving in the same direction at the speeds of 42 km/hr and 84 km/hr and their lengths are 320 metres and 380 metres respectively. What is the time taken (in seconds) by faster train to cross the slower train?

- (1) 60
- (2) 80
- (3) 90
- (4) 120

(SSC CHSL (10+2) Tier-I CBE Exam,  
(Shift-III) 07.03.2018)

(4)

$$D = S T$$
$$T_L = \frac{36 \times 5}{36 \times 18} \times 48$$
$$T_L = 480 \text{ m}$$

Two trains are moving in the same direction at the speeds of 35 km/hr and 71 km/hr. The time taken by faster train to cross a man sitting in the slower train is 48 seconds. What will be the length (in metres) of the faster train?

- (1) 540
- (2) 420
- (3) 480
- (4) 660

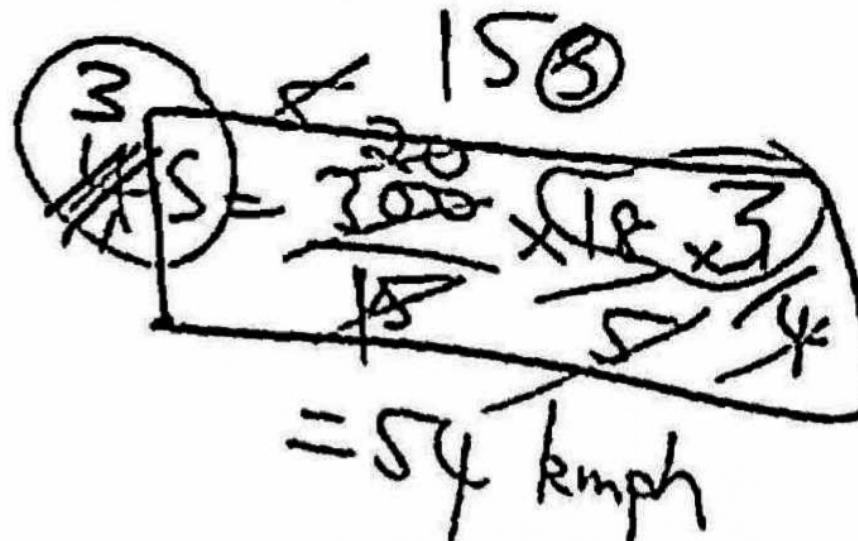
(SSC CHSL (10 + 2) Tier-I CBE Exam,  
(Shift-I) 16.03.2018)

⑤

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

$$\begin{array}{c} 3S \\ + S \\ \hline 4S \end{array}$$

$$4S = \underline{300 \text{ m}}$$



Two metro trains 150m long are moving in opposite directions. They cross each other in 15 seconds. If one is moving thrice as fast as the other, what is the speed of the faster metro train?

View solution

A. 70km/hr.

B. 54km/hr.

C. 50km/hr.

D. 72km/hr.

6

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

$$(S + 43.2) \cancel{\text{km}} - \frac{27 \cancel{\text{m}}}{\cancel{18} \text{ s}}$$



$$S + 43.2 = 27 \times \frac{18}{5}$$

$$\begin{array}{r} - 97.2 \\ - 43.2 \\ \hline 54.0 \end{array}$$

Two trains 150 m and 120 m long respectively moving from opposite directions cross each other in 10 secs. If the speed of the second train is 43.2 km/hr, then the speed of the first train is

- (1) 54 km/hr      (2) 50 km/hr  
(3) 52 km/hr      (4) 51 km/hr

(SSC Multi-Tasking Staff Exam.

10.03.2013, 1st Sitting : Patna)

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$$D = (89) T$$
$$58l = \cancel{12} \cancel{6} \cancel{1} \cancel{5} \cancel{l}$$
$$= 350 \text{ m}$$

Ratio between length of trains A and B is 3 : 5. Speed of train A is 72 km/h and that of train B is 54 km/h & they are running opposite to each other. If train A crosses train B in 16 seconds, then find length of train B.

- (a) 350 m
- (b) 250 m
- (c) 450 m
- (d) 150 m
- (e) 320 m



⑧

a, 30

$$\begin{aligned} D &= S T \\ \cancel{30} = 60 &= 108 \times 5 \\ &= 150 \quad \cancel{18} \\ B & \end{aligned}$$

Renu was sitting inside train A, which was travelling at 50 km/h. Another train, B, whose length was three times the length of A crossed her in the opposite direction in 15 seconds. If the speed of train B was 58 km/h, then the length of train A (in metre) is :

- (1) 210
- (2) 180
- (3) 160
- (4) 150 ✓

(SSC CGL Tier-II (CBE)  
Exam-2018, (12.09.2019))

Q

$$16 \times 3$$

$$376 \times 15 = (44 + w)$$

410

$$\frac{T_1}{T_2} = \frac{15}{10} = \frac{3}{2}$$

$S_1 : S_2$

$2 : 3$

$$\frac{2}{3} = \frac{44 - 8}{44 + w}$$

4

A train travelling at 44 km/h crosses a man walking with a speed of 8 km/h. in the same direction, in 15 seconds. If the train crosses a woman coming from the opposite direction in 10 seconds, then what is the speed (in km/h) of the woman?

- (1) 10.5      (2) 10  
(3) 9      (4) 8.5

(SSC CGL Tier-I (CBE))

Exam. 06.06.2019 (Shift-III))

10

$$T \rightarrow \cancel{72} s : 18 s$$

$$4 : 1$$

$$S \rightarrow \underline{1} : \underline{4}$$

$$(60 - \cancel{\frac{5x}{3}}) : (60 + \cancel{\frac{5x}{3}})$$
$$\cancel{24} : \cancel{96}$$

A train X travelling at 60 kmph overtakes another train Y, 225 metre long, and completely passes it in 72 seconds. If the trains had been going in opposite directions, they would have passed each other in 18 seconds. The length (in metre) of X and the speed (in kmph) of Y are, respectively:

- (1) 245 and 45 (2) 245 and 54  
✓ (3) 255 and 36 (4) 255 and 40

SSC CGL (CBE) Tier-I  
Exam, 09.03.2020 (Shift-II)