

**MAH-CET 2024 FOR
BCA BBA BBM BMS**

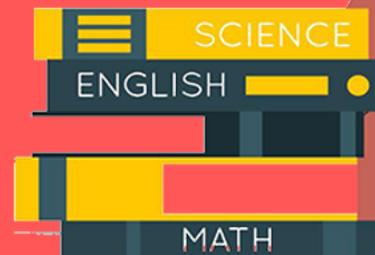
DAY - 24

MATHS

**TIME, SPEED
& DISTANCE**



**CRASH
COURSE**





18th April

11:50

**TOTAL
QUESTIONS
TODAY:**

08

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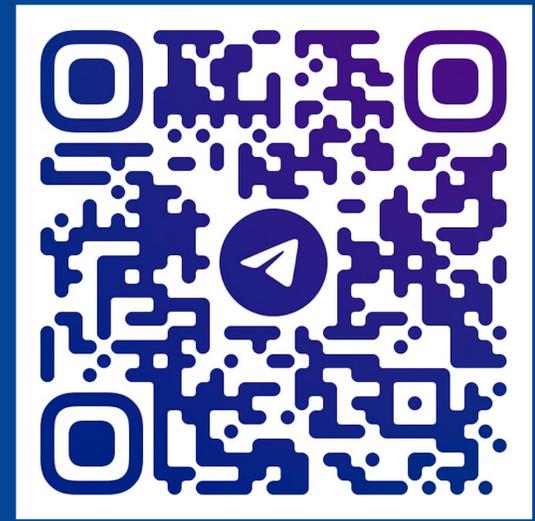
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Speed, Distance, Time Relation

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

$$\text{Speed} = \frac{d}{t}$$

$$\underline{\underline{100 \text{ km}}} \quad 5 \text{ hrs.}$$

$$\frac{100}{5} = \underline{\underline{20 \text{ km/hr.}}}$$



1. A person crosses a 600 m long street in 5 minutes. What is his speed in km per hour?

a) 3.6

b) 7.2

c) 8.4

d) 10

B

$$\rightarrow \frac{600}{1000} \text{ km}$$

$$\rightarrow \frac{5}{60} \text{ hr}$$

$$S = \frac{d}{t}$$

$$S = \frac{600}{1000}$$

$$\left(\frac{5}{60} \right)$$

$$= \frac{600}{1000} \times \frac{60}{5} = \frac{7.2}{1}$$

7.2



2. If a person walks at 14 km/hr instead of 10 km/hr, he would have walked 20 km more. The actual distance travelled by him is:

- a) 50 km
- b) 56 km
- c) 70 km
- d) 80 km

C

$$s = \frac{d}{t}$$

$$t = \frac{d}{s}$$

s	14	10
d	(x+20)	x

$$\frac{x+20}{14} = \frac{x}{10}$$

$$10x + 200 = 14x$$

$$\begin{aligned} 200 &= 4x \\ x &= \frac{200}{4} \\ x &= 50 \\ &+ 20 \\ &= 70 \end{aligned}$$



3. An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in $1\frac{2}{3}$ hours, it must travel at a speed of:

- a) 300 kmph
- b) 360 kmph
- c) 600 kmph
- d) 720 kmph

D

$$s = \frac{d}{t} \quad d \Rightarrow s \times t$$

$$d = 240 \times 5$$

$$d = x \times 1\frac{2}{3} = x \times \frac{5}{3}$$

$$240 \times 5 = x \times \frac{5}{3}$$

$$240 \times 3 = x \Rightarrow x = \underline{\underline{720 \text{ kmph}}}$$



4. The ratio between the speeds of two trains is 7 : 8. If the second train runs 400 km in 4 hours, then the speed of the first train is:

- a) 70 km/hr
- b) 75 km/hr
- c) 84 km/hr
- d) 87.5 km/hr

D

$$\frac{S_1}{100} = \frac{7}{8}$$

$$S_1 = \frac{700}{8} = \underline{\underline{87.5}}$$

$$S_2 = \frac{d}{t} = \frac{400}{4} = 100$$



5. A man on tour travels first 160 km at 64 km/hr and the next 160 km at 80 km/hr. The average speed for the first 320 km of the tour is:

- a) 35.55 km/hr
- b) 36 km/hr
- c) 71.11 km/hr
- d) 71 km/hr

(C)

$$t_1 = \frac{160}{64} = \frac{5}{2}$$

$$t_2 = \frac{160}{80} = 2$$

$$t_1 + t_2 = 2 + \frac{5}{2} = \frac{9}{2}$$

$$\text{Average speed} = \frac{\text{total Dist}}{\text{time}}$$

$$= \frac{320}{\frac{9}{2}}$$

$$= \frac{3200 \times 2}{9} = \frac{6400}{9} = \underline{\underline{71.11}}$$



$$\text{Train} = x \quad \text{Car} = y$$

6. It takes eight hours for a 600 km journey, if 120 km is done by train and the rest by car. It takes 20 minutes more, if 200 km is done by train and the rest by car. The ratio of the speed of the train to that of the cars is:

- a) 2 : 3
- b) 3 : 2
- c) 3 : 4
- d) 4 : 3

$$1^{\text{st}} \Rightarrow \frac{120}{x} + \frac{480}{y} = 9$$

$$t = \frac{d}{s}$$

$$\begin{cases} 120m + 480n = 9 \\ 200m + 400n = \frac{28}{3} \end{cases}$$

$$\frac{x}{y} = \frac{1}{1}$$

$$2^{\text{nd}} \Rightarrow \frac{200}{x} + \frac{400}{y} = 9 + \frac{20}{60} = \frac{28}{3}$$



7. A farmer travelled a distance of 61 km in 9 hours. He travelled partly on foot @ 4 km/hr and partly on bicycle @ 9 km/hr. The distance travelled on foot is:

- a) 14 km
- b) 15 km
- c) 16 km
- d) 17 km

C

9 hrs

$$t = \frac{d}{s}$$

$$9 = \frac{x}{4} + \frac{61-x}{9}$$

$$9 = 9x + 244 - 4x$$

36

$$324 = 5x + 244$$

$$324 - 244 = 5x$$

$$80 = 5x$$

$$x = \frac{80}{5} = \underline{\underline{16}}$$



8. 2 men start together to walk a certain distance, one at 5km/hr speed and another 4km/hr speed. The former arrives half an hour before the later. Find the distance?

a) 6km

b) 9km

c) 8km

d) 10km

$$d = s \times t$$

$$t = \frac{d}{s}$$

$$d = \frac{20}{2} = 10 \text{ km}$$

$$\frac{d}{4} - \frac{d}{5} = \frac{30}{60} \times \frac{1}{2}$$
$$\frac{5d - 4d}{20} = \frac{1}{2}$$

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DAY - 25

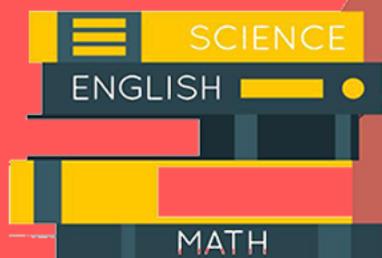
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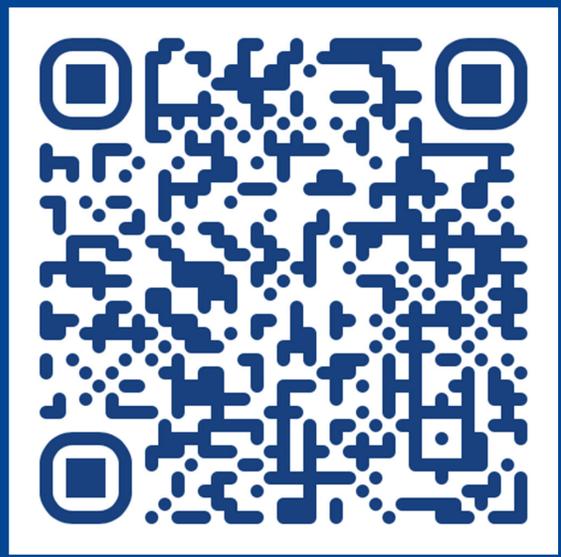
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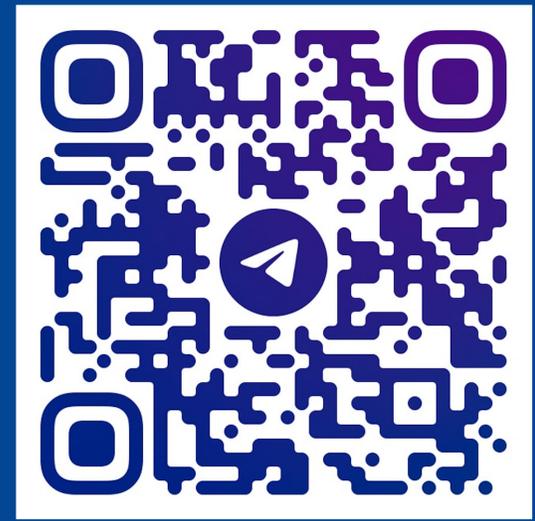


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