



CAVALRY DEFENCE ACADEMY (CDA) Dehradun

Army GD/Clerk ~~CDD~~ CDS / RIMC
Air ~~Y~~ / Mil
/ Scind
Navy SSRIMR

Maths
Reasoning

NUMBER SYSTEM

जो QUESTION अक्सर STUDENTS
EXAM में छोड़ देते हैं



~~150 to 700~~

Total numbers between

150 to 700

(a) ³⁰⁰ Total numbers ~~from~~ between 150 to
700

(b) Total numbers from 150 to 700

$$700 - 150 = 450$$



(between) - ~~550~~ Subtract — 1

Up to →

$$550 + 1 = 551$$

1. 150 to 700 →

997

between 200 to 300 →

101

from 200 to 300 →

$$4 \text{ to } 16 = 12 - 1 = 13$$

~~4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16~~



Question → 200 to 500
between 299

How many even numbers!

Question → How many even numbers between 200 to 500?

202, 204, 206, ... 498
202, 204, ... 298

$$\text{first} = \underline{\underline{202}} \quad d = 2$$

$$n = \left(\frac{\text{Last} - \text{first}}{d} + 1 \right) = \frac{298 - 202}{2} + 1 = \frac{96}{2} + 1 = 48 + 1 = 49$$

between 200 to 500

299

odd even
200 149
 $\frac{200}{2} + 1 = 100 + 1 = 101$
 $\frac{149}{2} + 1 = 74 + 1 = 75$



Question: - How many odd numbers
between 205 to 1005.

205, 207, 209, ..., 1005

$$\begin{array}{r} 1005 \\ 205 \\ \hline 800 \end{array}$$

$$n = \frac{1005 - 205}{2} + 1$$

$$= \frac{800}{2} + 1 = 400 + 1 = 401$$
$$\underline{\underline{25000}}$$

Total factors



Time and Work

सूत्र

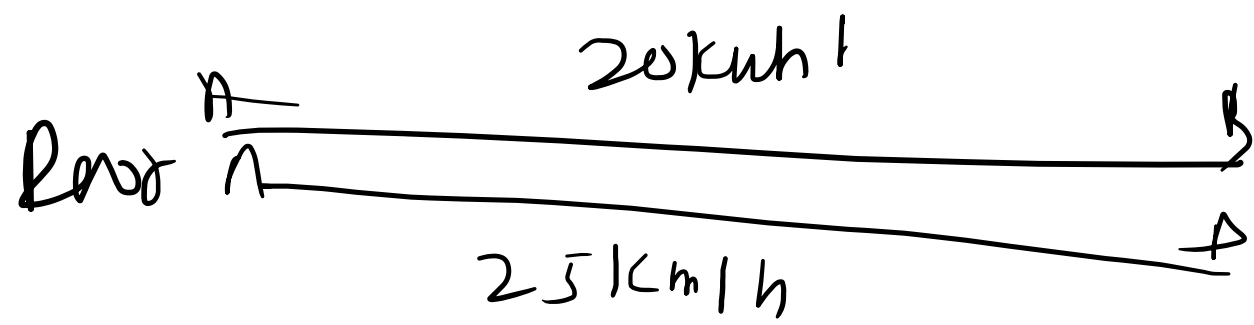
सूत्र

$$\frac{a+b}{2}$$

$$\frac{14+16}{2}$$

$$\text{Average speed} = \frac{2xy}{x+y}$$

$$\text{ave} = \frac{20+25}{2}$$



$$\begin{aligned} & \frac{2 \times 20 \times 25}{20 + 25} \\ &= \frac{1000}{45} \text{ km/h} \end{aligned}$$



Speed / distance / time

$$\underline{\underline{\text{m/s}}} \rightarrow \underline{\underline{\frac{18}{5} \text{ km/h}}}$$

$$\underline{\text{km/h}} \rightarrow \underline{\frac{5}{18} \text{ m/s}}$$

M/s / (5)	5	10	15	<u>20</u>	25	30	35
Km/h / 18	18	36	54	(72)	90	(108)	126

20 m/s

30 m/s

72 km/h

108 km/h

(15)
(54)



Average Speed $\rightarrow \frac{2xy}{x+y}$

50 km/h

Kampus $\xrightarrow{50 \text{ km/h}}$ Lucknow

$\xrightarrow{60 \text{ km/h}}$

$\xrightarrow{90 \text{ km/h}}$

total average speed = $\frac{3xy^2}{xy + yz + zx}$

$$= \frac{3 \times 50 \times 60 \times 90}{50 \times 60 + 60 \times 90 + 90 \times 50}$$



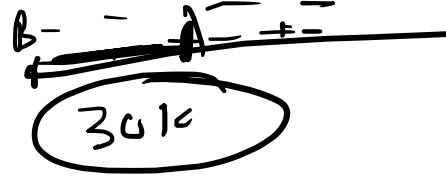
Q4 Two train Delhi - Chandigarh

A - 60 km/h

6 PM

B - 75 km/h

6:30 PM



चंदीगढ़ की ओर

← 45:30

More = 30 KM

B

30 km

$\xrightarrow{75-60}$
 $= \underline{\underline{15 \text{ km/h}}}$

Find

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

time = $\frac{30 \text{ km}}{15 \text{ km/h}} = \underline{\underline{2 \text{ hour}}}$

6:30 + 2 = 8:30 PM



720 km

660 km

60 km/h

Kanpur

9:00 AM

60 km/hr

time = more distance

Delhi

21 more speed
= 660

10: AM
120 km/hr

3180

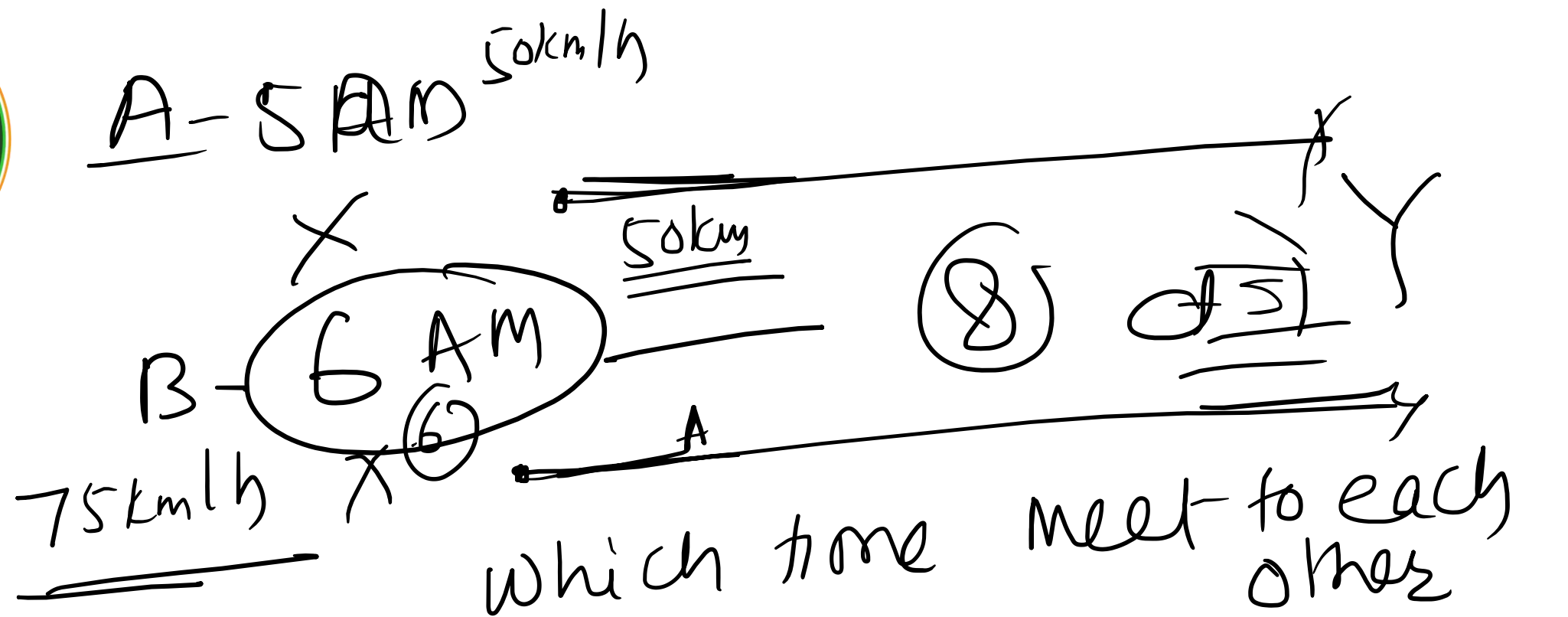
= 3.6

1:40

Train चिकित्सक

गिराई

more = 60 + 120 = 180 km/h



Speed = ~~ch~~ More speed $\Rightarrow 75 - 50 = 25 \text{ km/h}$

More time ~~More time~~ More dist = 50 km

$$T = \frac{50}{25} = 2 \text{ ~~km~~ h}$$



H.W-

for

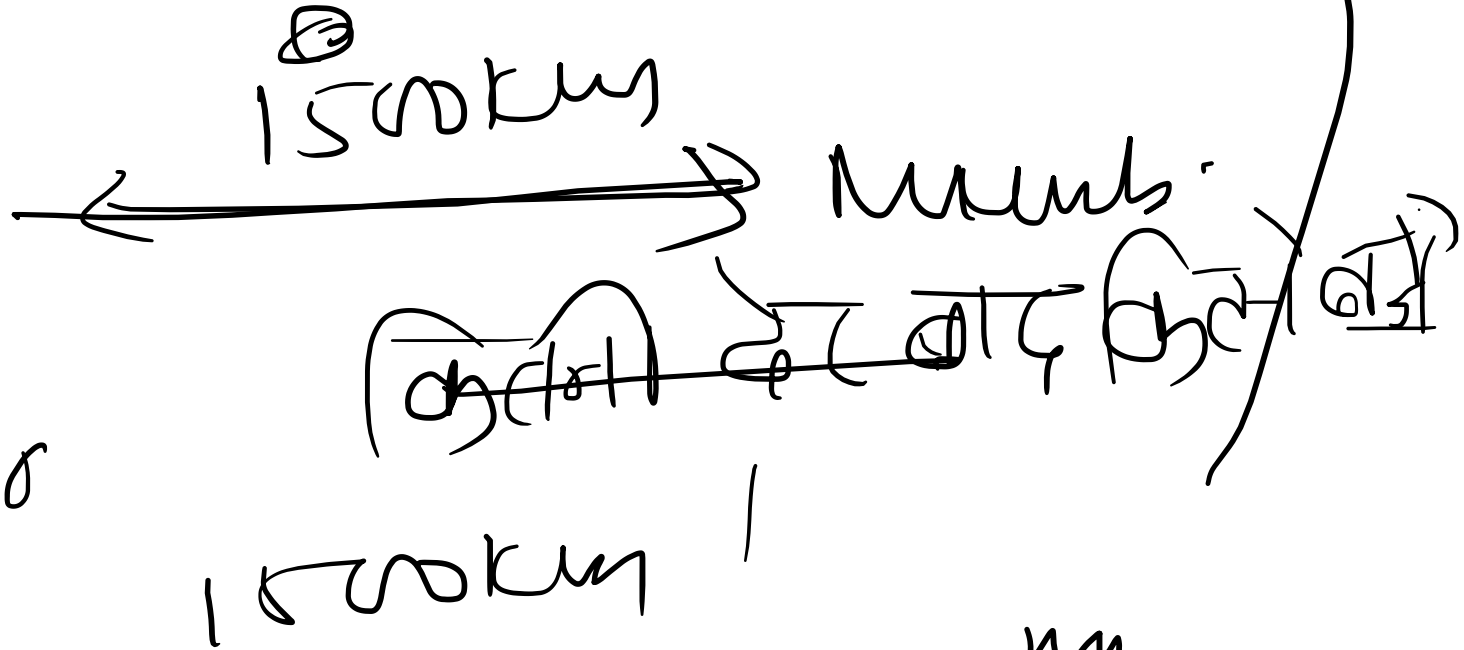
train

①

Chandigarh

A — 6:00 AM 75 km

B → 8:00 AM 100 km/hr



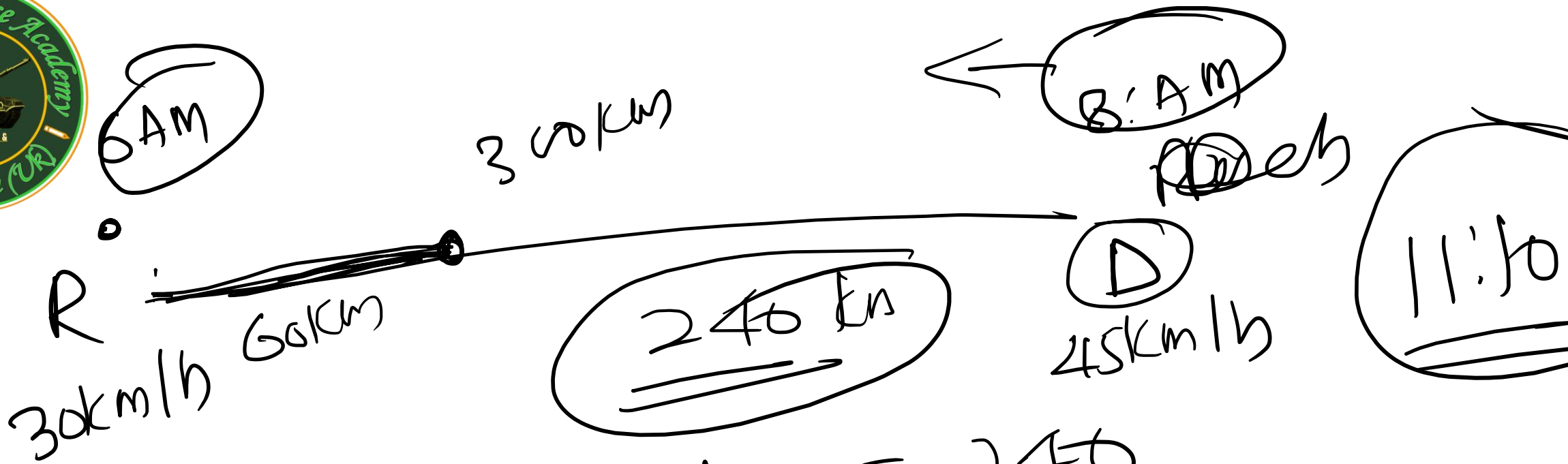
②

Ch

A 6:00 AM
75 km/h

दिशा दिशा

8:00 AM
100 km/h



more dist = 240

more speed = 45 + 30 km/h
= 75 km/h

$$\text{more} = \frac{480}{75} = 6.4$$

$$\frac{16}{5} = 3.2$$



More Speed $\Rightarrow$

Same direction

oppo dir

More distance -
count

speed ~~+~~

speed ~~+~~

