

57) The length and breadth of a rectangle is  $(x + 5)$  cm and  $(x - 2)$  cm respectively. If the perimeter of the rectangle is 8 cm more than the perimeter of the square whose area is 400 cm<sup>2</sup>, then find the area of the rectangle?

- A. 540 cm<sup>2</sup>
- B. 510 cm<sup>2</sup>
- C. 420 cm<sup>2</sup>
- D. 480 cm<sup>2</sup>
- E. 450 cm<sup>2</sup>

Side =  $\sqrt{400} = 20$   
 Area = (side)<sup>2</sup>

$P = 2(L + B)$   
 $= 2(x + 5 + x - 2) = 2(2x + 3) = 86$

$2x + 3 = 43$       $x = 20$

Perimeter =  $4 \times \text{side} = 4 \times 20 = 80$

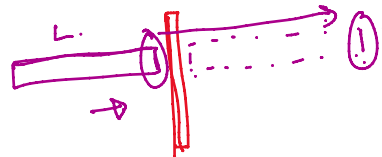
$L = 25$       $B = 18$

$25 \times 18 = 450$

58) A train crosses a tower in 20.25 seconds and also crosses a 150 m long bridge in 27 seconds. Find the speed of the train?

- A. 60 kmph
- B. 72 kmph
- C. 80 kmph
- D. 90 kmph
- E. None of these

$20.25 = 20\frac{1}{4}$  sec.  
 $= \frac{81}{4}$



$d = m$   
 $s = m/s$

Time =  $\frac{\text{distance}}{\text{Speed}}$

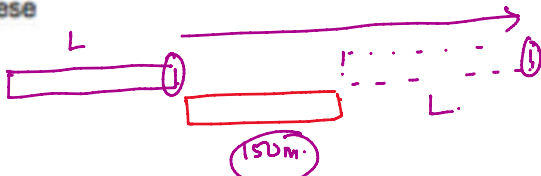
$\frac{81}{4} = \frac{L}{S}$      (1)

$27 = \frac{L + 150}{S}$      (2)

$27 = \frac{L}{S} + \frac{150}{S}$

$27 = \frac{81}{4} + \frac{150}{S}$

$1 m/s = \frac{18 \text{ km/hr}}{5}$



$S = \frac{50}{27} \times 4 = \frac{200}{9} \text{ m/s}$   
 $\frac{150}{S} = 27 - \frac{81}{4} = \frac{27}{4}$

$S = \frac{40}{9} \times \frac{2}{4} = \frac{20}{9}$

$1 \frac{\text{km}}{\text{hr}} = \frac{1000 \text{ m}}{3600 \text{ s}} = \frac{5}{18} \text{ m/s}$

59) The boat covers  $x$  km upstream in  $t$  hours and the same boat covers  $(x + 40)$  km downstream in  $(t - 4)$  hours. If the speed of the stream is 7 kmph, then find the speed downstream?

- A. 32 kmph
- B. 25 kmph
- C. 28 kmph
- D. 35 kmph
- E. Cannot be determined

Upstream  $\rightarrow$  against the current.  
 downstream  $\rightarrow$  with " "



Net Speed =  $a - b$

$\frac{x}{t} = a - b$      (1)

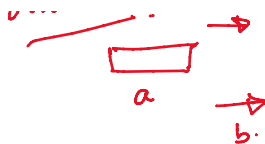


Net Speed =  $a + b$       $b = 7$

$\frac{x + 40}{t - 4} = a + b$      (2)

$$\begin{matrix} x \\ t \end{matrix} = \begin{matrix} a \\ b \end{matrix} + 7$$

$$\frac{x+40}{t-4} = a+7$$



$$\frac{x+40}{t-4} = a+b \quad (2)$$

Directions (61-65): Read the following information carefully and answer the questions.

The given information shows the total number of fans (ceiling and table) sold by four different shops A, B, C and D.

**Ceiling Fan:** Ratio of the number of Ceiling fans sold by shops A and B is 1:2 respectively and the difference between the number of Ceiling fans sold by shops A and D is 90. Number of Ceiling fans sold by shop C is 20% less than that of shop D. Number of Ceiling fans sold by shop C is 60% of number of Ceiling fans sold by shop B.

62) Out of the number of table fans sold by shop B, 25% of table fans sold at a profit of 40% and the remaining table fans sold at a profit of 20%. If all the table fans sold for Rs. 1.5 lakh in a shop B, then find the cost price of each table fan in shop B?

- A. Rs. 800
- B. Rs. 450
- C. Rs. 600
- D. Rs. 500
- E. None of these

25% of 240 = 60  
 Total CP = 240x + 180x 120% x

$$60 \times 140\% x + 180 \times 120\% x = 150000$$

$$60 \times \frac{140}{100} x + 180 \times \frac{120}{100} x = 150000$$

$$84x + 216x = 150000$$

$$300x = 150000$$

$$x = 500$$

63) Find the average number of ceiling fans sold by shops A, C and D together?

- A. 130
- B. 170
- C. 222
- D. 110
- E. None of these

$$\frac{450 + 216}{3} = \frac{666}{3}$$

64) If the total number of fans sold by shop E is 20% more than that of shop D and the ratio of number of table fans sold by shops E and D is 9:8 respectively, then find the number of ceiling fans sold by shop E?

- A. 336
- B. 420
- C. 280
- D. 150
- E. None of these

$$\text{Total of E} = 120\% \times D = \frac{120}{100} \times 430 = 516$$

$$516 - 180 = 336$$

$$\frac{E}{D} = \frac{9}{8}$$

$$\frac{E}{160} = \frac{9}{8}$$

$$E = 180 \text{ table}$$

	Ceiling	Table	Total
A	$x = 180$	$2y = 200$	380
B	$2x = 360$	$\frac{8}{5}y + 80 = 240$	600
C	$\frac{6}{5}x = 216$	$y = 100$	316
D	$x + 90 = 270$	$\frac{8}{5}y = 160$	430
	1026	700	1726

$$\frac{6}{5}x = 80\% (x + 90) = \frac{8}{10}x + \frac{8}{10} \times 90$$

$$\frac{6}{5}x - \frac{4}{5}x = 72$$

$$\frac{2}{5}x = 72 \implies x = 180$$

**Reasoning Ability**

Directions (66-70): Study the following information carefully and answer the below questions

Ten persons - ~~L~~, M, N, ~~O~~, P, Q, R, S, T, and U are attending the conference on two different dates either 9 or 11 of five different months - January, May, August, October, and December of the same year but not necessarily in the same order.

68) Four of the five among the following are similar in such a way to form a group, who among the following doesn't belong to the group?

- a) P
- b) R
- c) The one who attends immediately before U
- d) The one who attends two persons after N
- e) Q

different months.

	9	11	N-U
Jan	R	T	U
May	Q/M	S	= R
Aug	M/Q	T	(S-U) - 1
Oct	O	P	= (T-R)
Dec	N	X U	N L - - - O
			L - N
			= R - P