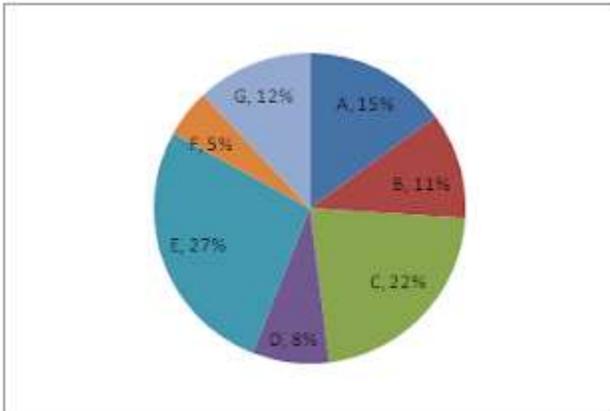


Quant based DI

Seven companies A, B, C, D, E, F and G are engaged in the production of two items I and II. Comparative data about the production of these items by the companies is given in the following graph and table. Study them carefully and answer the questions given below.

Percentage of the total production produced by the seven companies



Cost of the total production (both items together) by seven companies = Rs 25 crores

Ratio of production between items I and II and the percent profit earned for the two items

Company	Ratio of Production		Per cent profit earned	
	Item I	Item II	Item I	Item II
A	2	3	25	20
B	3	2	32	35
C	4	1	20	22
D	3	5	15	25
E	5	3	28	30
F	1	4	35	25
G	1	2	30	24

Q6. What is the total cost of the production of item I by companies A and C together in Rs crore?

- (a) 9.25
- (b) 5.9
- (c) 4.1625
- (d) 4.9
- (e) None of these

Q7. What is the amount of profit earned by company D on item II?

- (a) Rs 3.125cr
- (b) Rs 31.25 cr
- (c) Rs 3.125 lakhs
- (d) Rs 31.25 lakhs
- (e) None of these

Q8. Cost of production of item I by company F is what per cent of the cost of production of item II by company D?

- (a) 16%
- (b) 33.33%
- (c) 66.67%
- (d) 20%
- (e) None of these

Q9. What is the ratio of the cost of production of item I by company A to the cost of production of item I by company D?

- (a) 3 : 5
- (b) 1 : 2
- (c) 2 : 1
- (d) 2 : 3
- (e) None of these

Q10. What is the total of the profit earned by company B on the production of item I and the profit earned by company A on production of item II?

- (a) Rs 9.78 cr
- (b) Rs 97.8 lakhs
- (c) Rs 52.8 lakhs
- (d) Rs 5.28 cr
- (e) None of these

S6. Ans. (b)

Sol.

$$\text{Total cost of production by company A} = \frac{15}{100} \times 25 = 3.75 \text{ crores}$$

$$= 3.75 \text{ crores}$$

$$\text{Total cost of production by Company C} = \frac{22}{100} \times 25 = 5.5 \text{ crores}$$

$$\text{Cost of production of item I by Company A} = \frac{2}{3} \times 3.75 = 1.5 \text{ crores}$$

$$\text{Cost of production of item I by Company C} = \frac{4}{5} \times 5.5 = 4.4 \text{ crores}$$

$$\therefore \text{Required total cost} = 1.5 + 4.4 = 5.9 \text{ crores}$$

S7. Ans. (d)

Sol.

$$\text{Required profit earned} = \frac{25}{100} \times \frac{5}{8} \times \frac{8}{100} \times 25 = 0.3125 \text{ crores}$$

$$= 31.25 \text{ lakhs}$$

S8. Ans. (d)

Sol.

$$\text{Required \%} = \frac{\frac{5}{100} \times \frac{1}{3} \times 25}{\frac{100}{8} \times \frac{2}{3} \times 25} \times 100$$

$$= \frac{0.25}{1.25} \times 100 = 20\%$$

m

S9. Ans. (c)

Sol.

$$\text{Required Ratio} = \frac{\frac{15}{100} \times \frac{2}{3} \times 25}{\frac{100}{8} \times \frac{2}{3} \times 25}$$

$$= \frac{30}{500} \times \frac{800}{24}$$

$$= \frac{5 \times 8}{5 \times 4}$$

$$= 2 : 1$$

S10. Ans.(b)

Sol.

$$\text{Required total profit} = \left(\frac{32}{100} \times \frac{3}{5} \times \frac{11}{100} \times 25\right) + \left(\frac{20}{100} \times \frac{3}{5} \times \frac{15}{100} \times 25\right)$$

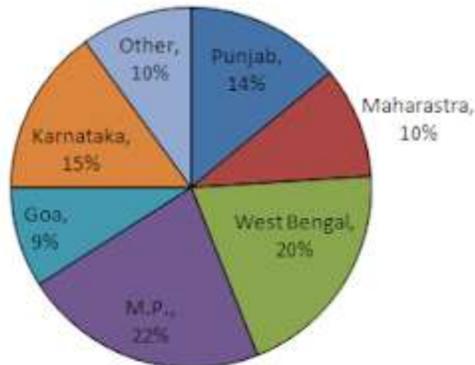
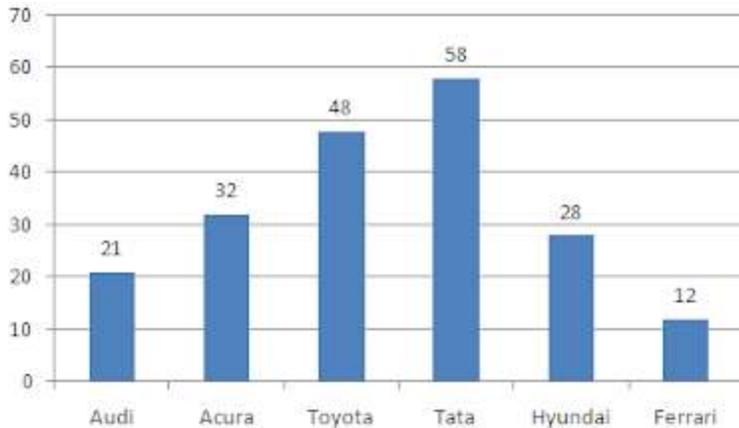
$$= 0.528 + 0.45$$

= 0.978 crores

= 97.8 lakhs

The bar graph shows the sales of six different car-manufacturers in 2015 (in thousands of units) in India. The pie-chart shows the break-up of sales of Brand TATA in 2013 in different states of India.

Note → All manufactured cars are sold in these given 7 states.



State wise sale of Brand Tata in 2015

Q6. What is the difference between the sales of Tata in West Bengal and that in Goa?

- (a) 50600
- (b) 6380
- (c) 6567
- (d) 6220
- (e) None of these

Q7. By what percent should the sales of brand Tata is increased so that it sales volume in Punjab becomes 15000, while the volume of sales in all other state remains the some (approximately)

- (a) 10%
- (b) 9%
- (c) 7%
- (d) 13%
- (e) 12%

Q8. If in 2016, the total sale of Brand Tata increase by 12%, while its sale in Maharashtra is increased by 34% and in M.P. by 22%, what is the approximate sales increase in the rest of the states.

(a) 7000
 (b) 6500
 (c) 8000
 (d) 10,000
 (e) 12500

Q9. Total sale of Audi, Acura and Toyota in 2015 is what percent of the total sales of tata in all states together in that year, 2015. (approximately)

(a) 100%
 (b) 113%
 (c) 190%
 (d) 175%
 (e) 150%

Q10. If total sale of all brands together increases by 20% in 2016 and sale of Tata in West Bengal increase by 10% keeping % percentage distribution of Tata in these seven states same as previously then, what is the total sale of all cars in 2016 of all brands except brand Tata.

(a) 1,75,000
 (b) 1,50,000
 (c) 2,00,000
 (d) 1,00,000
 (e) None of these

S6. Ans.(b)

Sol. Total sale of Total cars in West Bengal

$$= \frac{58}{100} \times 20 = 11.6 \text{ thousands}$$

$$= 11600$$

Total sale of Tata car in Goa = $58 \times \frac{9}{100} = 5220$

Required difference = $11600 - 5220$
 = 6380

S7. Ans.(e)

Sol. Sales of tata cars in Punjab = $\frac{58}{100} \times 14 = 8.12 \text{ thousands}$

= 8120

Increase in volume = $15000 - 8120$

= 6880

Percentage increase = $\frac{6880}{58000} \times 100$

≈ 12%

S8. Ans.(c)

$$\text{Sol. Total sale of tata in 2016} = \frac{112}{100} \times 58,000$$

$$= \frac{56 \times 29}{25} \times 1000$$

$$= 64960$$

$$\text{New total sale in Maharashtra} = \frac{134}{100} \times \frac{10}{100} \times 58000$$

$$= 7772$$

$$\text{New total sale in M.P.} = \frac{122}{100} \times \frac{22}{100} \times 58000$$

$$\approx 15567$$

$$\text{Total new sale in these states} = 23339$$

Previous overall sale in all state except M.P. and Maharashtra

$$= \frac{58}{100} \times 58,000$$

$$= 33640$$

Required increase in sale in other states

$$= (64960 - 23339) - 33640$$

$$= 7981$$

$$\approx 8000$$

S9. Ans.(d)

$$\text{Sol. Required \%} = \frac{101}{58} \times 100$$

$$\approx 175\%$$

S10. Ans.(a)

$$\text{Sol. Net total sale} = \frac{120}{100} \times 199000 = 238800$$

$$\text{New sale of Tata in West Bengal} = \frac{110}{100} \times \frac{20}{100} \times 58000 = 12760$$

$$\text{New total sale of Tata} = \frac{12760}{20} \times 100$$

$$= 63800$$

$$\text{Required total sale} = 238800 - 63800$$

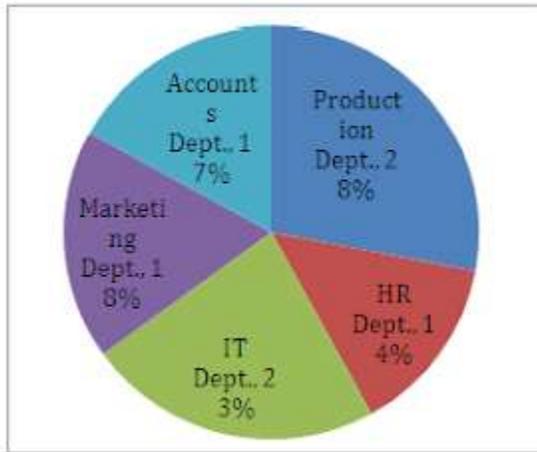
$$= \underline{1,75,000}$$

Study the following pie chart and table carefully to answer the following questions that follow:

Percentage break up of employees working in various departments of an organisation and the ratio of men to women in them.

Total Number of Employees = 1800

Percentage Break up of employees



Ratio of Men to Women		
Department	Men	Women
Production	11	1
HR	1	3
IT	5	4
Marketing	7	5
Accounts	2	7

Q6. What is the number of men working in the marketing department?

- (a) 132
- (b) 174
- (c) 126
- (d) 189
- (e) None of these

S6. Ans.(d)

Sol.

Number of men working in Marketing department

$$= \frac{7}{12} \times 1800 \times \frac{18}{100}$$

$$= 189$$

Q7. The number of women working in the IT department of the organisation forms approximately what per cent of the total number of employees in the organisations from all departments together?

- (a) 7
- (b) 5
- (c) 19
- (d) 15
- (e) 10

S7. Ans.(e)

Sol.

Women in IT department

$$= \frac{4}{9} \times 1800 \times \frac{23}{100}$$

$$= 184$$

$$\therefore \text{Required percentage} = \frac{184}{1800} \times 100 = 10.22\% \approx 10\%$$

Q8. What is the respective ratio of the number of women working in the HR department of the organisation and the total number of employees in that department?

- (a) 3: 4
- (b) 2: 5
- (c) 2: 9
- (d) 3: 7
- (e) None of these

S8. Ans.(a)

Sol.

Number of women working in HR department

$$= \frac{3}{4} \times 1800 \times \frac{14}{100}$$

$$= 189$$

and Total employees in that department

$$= \frac{14}{100} \times 1800$$

$$= 252$$

$$\therefore \text{Required ratio} = \frac{189}{252} = \frac{3}{4}$$

Q9. What is the respective ratio of the number of men working in the Accounts departments to the total number of employees working in that departments?

- (a) 9: 2
- (b) 7: 6
- (c) 2: 9
- (d) 6: 7
- (e) None of these

S9. Ans.(c)

Sol.

$$\text{Required ratio} = \frac{\frac{2}{9} \times 1800 \times \frac{17}{100}}{\frac{17}{100} \times 1800} = \frac{2}{9}$$

Q10. The number of men working in the production department of the organisation forms what per cent of the total number of employees working in that department? (rounded off to two digits after decimal)

- (a) 89.76
- (b) 91.67
- (c) 88.56
- (d) 94.29
- (e) None of these

S10. Ans.(b)

Sol.

Men working in Production department

$$= \frac{11}{12} \times 1800 \times \frac{28}{100}$$

$$= 462$$

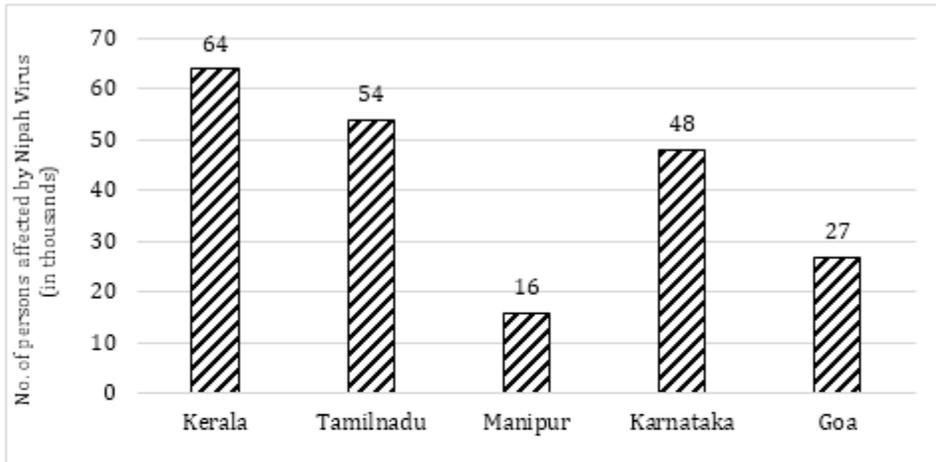
Total employees in Production department

$$= \frac{28}{100} \times 1800$$

$$= 504$$

$$\therefore \text{Required percentage} = \frac{462}{504} \times 100 = 91.67\%$$

The following bar graph shows the no. of persons who got affected by 'Nipah virus' in five different states of India. Also, the table shows ratio of male to female in them. Study the graphs carefully to answer the related questions.



States	Ratio of male to female	
	Male	Female
Kerala	5	3
Tamilnadu	5	4
Manipur	3	1
Karnataka	7	5
Goa	2	1

Q6. Total no. of male persons affected by Nipah virus in Tamilnadu are what percent more or less than that of male persons from Kerala who were affected by Nipah virus?

- (a) 25% less
- (b) 25% more
- (c) 30% less
- (d) 30% more
- (e) 20% more

Q7. Find the average No. of females who were affected by Nipah virus in all the five states.

- (a) 14,200
- (b) 12,600
- (c) 16,200
- (d) 10,400
- (e) 12,200

Q8. If 50/3% out of total affected Males in Karnataka are of age group (21-25) years, 100/3% out of total affected males are of age group (26-30) years and rest are of age group above 30 years from the same state, then find total no. of males from Karnataka who are affected by 'Nipah virus' having age of (21-25) years and (26-30) years together.

- (a) 16,000
- (b) 14,000
- (c) 12,000
- (d) 18,000
- (e) 10,000

Q9. What is the difference between total no. of males in Tamilnadu, Manipur and Goa together and total no. of females in Kerala, Manipur and Karnataka together who are affected by Nipah virus.

- (a) 15,000
- (b) 13,000

- (c) 14,000
- (d) 12,000
- (e) 18,000

Q10. Total no. of females in Tamilnadu who are affected by 'Nipah virus' is what percent more than that of females from Karnataka who are affected by the same virus?

- (a) 20%
- (b) 30%
- (c) 15%
- (d) 25%
- (e) 22%

Solutions (6-10):

S6. Ans. (a)

Sol.

No. of male persons affected by Nipah virus in

$$\text{Tamilnadu} = \frac{5}{9} \times 54$$

$$= 30 \text{ thousand}$$

No. of male persons affected by Nipah virus in Kerala

$$= \frac{5}{8} \times 64$$

$$= 40 \text{ thousand}$$

$$\text{Required parentage} = \frac{40-30}{40} \times 100$$

$$= 25\% \text{ less}$$

S7. Ans. (c)

Sol.

Required average no.

$$\frac{1}{5} \times \left(\frac{3}{8} \times 64 + \frac{4}{9} \times 54 + \frac{1}{4} \times 16 + \frac{5}{12} \times 48 + \frac{1}{3} \times 27 \right) \text{ thousand}$$

$$= \frac{1}{5} \times (24 + 24 + 4 + 20 + 9) \text{ thousand}$$

$$= \frac{1}{5} \times (24 + 24 + 4 + 20 + 9) = \text{thousand}$$

$$= \frac{1}{5} \times 81,000$$

$$= 16,200$$

S8. Ans. (b)

Sol.

$$\therefore 16\frac{2}{3}\% \longrightarrow \frac{1}{6}$$

$$33\frac{1}{3}\% \longrightarrow \frac{1}{3}$$

$$\text{Required answer} = \frac{7}{12} \times \left[\frac{1}{6} + \frac{1}{3} \right] \times 48$$

$$= \frac{7}{12} \times \frac{1}{2} \times 48$$

$$= 14,000$$

S9. Ans. (d)

Sol.

Total males in Tamilnadu, Manipur and Goa together who affected by 'Nipah Virus'

$$= \frac{5}{9} \times 54 + \frac{3}{4} \times 16 + \frac{2}{3} \times 27$$

$$= 30 + 12 + 18$$

$$= 60 \text{ thousand}$$

Total no. females in Kerala, Manipur and Karnataka together who are affected by Nipah virus

$$= \frac{3}{8} \times 64 + \frac{1}{4} \times 16 + \frac{5}{12} \times 48$$

$$= 24 + 4 + 20$$

$$= 48 \text{ thousand}$$

$$\therefore \text{Required difference} = 60 - 48$$

$$= 12,000$$

S10. Ans. (a)

Sol.

$$\text{Total females in Tamilnadu who are affected by 'Nipah virus'} = \frac{4}{9} \times 54 \text{ thousand}$$

$$= 24,000$$

$$\text{Total no. of females in Karnataka affected by Nipah virus} = \frac{5}{12} \times 48 \text{ thousand}$$

$$= 20,000$$

$$\therefore \text{Required percentage} = \frac{24000-20000}{20000} \times 100 = 20\%$$

Directions (1-5): Table shown below shows population of five different cities. Some data is given in percent while some data is given in numbers. Study the table carefully and solve the following questions.

City	Male	Female	Transgender
X	45%	30%	2000
Y	50%	3000	35%
Z	8000	35%	15%
A	45%	3600	25%
B	38%	32%	4200

Note: Total population = Male + Female + Transgender

Q1. Population of city Z is what percent less than population of city Y.

- (a) 30%
- (b) 25%
- (c) 20%
- (d) 15%
- (e) 17.5%

S1. Ans.(c)

Sol.

$$\text{Population of city Y} = \frac{3000}{0.15}$$

$$= 20,000$$

$$\text{Population city of Z} = \frac{8000}{0.5} = 16,000$$

$$\text{Required percentage} = \frac{20,000 - 16,000}{20,000} \times 100$$

$$= \frac{4000}{20,000} \times 100$$

$$= 20\%$$

S2. Ans.(e)

Sol.

Required difference

Q2. Ratio of literate male to Illiterate male of city A is 11 : 7. What is the different between literate male and Illiterate male of city A.

- (a) 900
- (b) 1050
- (c) 1400
- (d) 800
- (e) 1200

S2. Ans.(e)

Sol.

Required difference

$$= \frac{(11 - 7)}{18} \times 0.45 \times \frac{3600}{0.3}$$

$$= 1200$$

Q3. Female population in city Z is how much percent less than male and transgender population of city A.

- (a) 25%
- (b) $33\frac{1}{3}\%$
- (c) 50%
- (d) $66\frac{2}{3}\%$
- (e) 75%

S3. Ans.(b)

Sol.

$$\text{Female population in city Z} = \frac{8000}{0.5} \times 0.35$$

$$= 5600$$

$$\text{Male \& transgender population in city A} = \frac{3600}{0.3} \times [0.7]$$

$$= 8400$$

Required percentage

$$= \frac{8400 - 5600}{8400} \times 100$$

$$= \frac{2800}{84} \% = \frac{100}{3} \%$$

$$= 33\frac{1}{3} \%$$

Q4. Male population of city B is how much more than female population of city X?

- (a) 2900
- (b) 2840
- (c) 2760
- (d) 2920
- (e) 2980

S4. Ans.(d)

Sol.

$$\text{Male population in city B} = \frac{4200}{0.3} \times 0.38$$

$$= 5320$$

$$\text{Female population in city X} = \frac{2000}{0.25} \times 0.3$$

$$= 2400$$

$$\text{Required difference} = 5320 - 2400$$

$$= 2920$$

Q5. Find the ratio of transgender population of city Z to the transgender population of city A.

- (a) 4/5
- (b) 5/4
- (c) 3/5
- (d) 5/3
- (e) 2/5

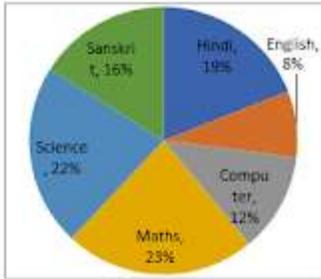
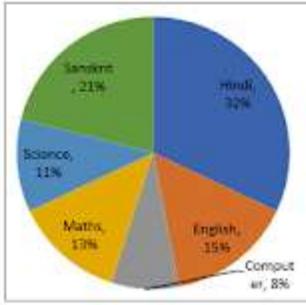
S5. Ans.(a)

Sol

$$\text{Required ratio} = \frac{\frac{8000}{0.5} \times 0.15}{\frac{3600}{0.3} \times 0.25}$$

$$= \frac{2400}{3000} = \frac{4}{5}$$

Direction (Q1-5)-Percentage of students interested in studying different subjects (Hindi, English, Computer, Maths, Science, Sanskrit) in Pie chart I & percentage of girls interested in studying these subjects in pie chart II.



RATIO OF BOYS : GIRL = 5:3
TOTAL STUDENTS = 48,000

Q1. For which of the subject, the ratio of percentage of student interested in that subject to the percentage of girls interested in that subject is minimum?

- (a) Science
- (b) Computer
- (c) Maths
- (d) English
- (e) None of these

S1. Ans.(a)

Sol.

Required ratio

$$\frac{\text{Percentage of total student}}{\text{Percentage of females}}$$

$$\text{For science} = \frac{11}{22} = 0.5$$

$$\text{For computer} = \frac{8}{12} = 0.66$$

$$\text{For Maths} = \frac{13}{23} = 0.565$$

$$\text{For English} = \frac{15}{8} = 1.875$$

$$\text{For Hindi} = \frac{32}{19} = 1.168$$

$$\text{For Sanskrit} = \frac{21}{16} = 1.3125$$

∴ Ratio for science is minimum

Q2. What is the difference between the no. of girls interested in studying computer and that of science?

- (a) 1.5 thousand
- (b) 2.2 thousand
- (c) 1.8 thousand

- (d) 1.9 thousand
(e) None of these

S2. Ans.(c)

Sol.

Total no. of girls studying

$$= \frac{3}{8} \times 48$$

=18 thousands

Difference between no. of girls interested in studying computer and that of science.

= 10% of 18 thousand = 1.8 thousand

Q3. What is the ratio of the no. of boys interested in Computer and English together to that of girls interested in studying Sanskrit and Maths together?

- (a) 124 : 117
(b) 128 : 119
(c) 19 : 17
(d) 23 : 19
(e) None of these

S3. Ans.(a)

Sol.

Boys interested in computer

$$= \frac{8}{100} \times 48 - \frac{12}{100} \times 18 = 1.68 \text{ thousand}$$

Boys interested in English

$$\frac{15}{100} \times 48 - \frac{8}{100} \times 18 = 5.76 \text{ thousand}$$

Girls interested in Sanskrit

$$= \frac{16}{100} \times 18 = 2.88 \text{ thousand}$$

Girls interested in Maths = $\frac{23}{100} \times 18 = 4.14$ thousands

∴ Required ratio

$$= \frac{5.76 + 1.68}{2.88 + 4.14} = \frac{124}{117}$$

Q4. What is the ratio of the no. of students interested in studying maths and Sanskrit together to that interested in Hindi and Science together?

- (a) 23 : 32
(b) 34 : 43
(c) 101 : 130
(d) 11 : 32
(e) None of these

S4. Ans.(b)

Sol.

Required ratio

$$= \frac{21 + 13}{11 + 32} = 34 : 43$$

Q5. No. of girls studying Hindi and English together is approximately what percent of the no. of boys studying the same subject?

- (a) 27%
- (b) 30%
- (c) 17%
- (d) 23%
- (e) 21%

S5. Ans.(a)

Sol.

No. of boys studying Hindi

$$= \frac{32}{100} \times 48 - \frac{19}{100} \times 18$$

$$= 15.36 - 3.42$$

$$= 11.94$$

$$\text{No. of boys studying English} = \frac{15}{100} \times 48 - \frac{8}{100} \times 18$$

$$= 7.20 - 1.44$$

$$= 5.76$$

∴ required percentage

$$= \frac{4.86}{17.7} \times 100 \approx 27.457\% \approx 27\%$$

Directions (6-10): Study the following table carefully to answer the questions based on it. The table shows the data of six schools about result of students of class XIIth appearing in a competitive exam from respective schools.

School	%passed	M : F (passed)	F : M (Failed)
DPS	68	5 : 3	9 : 7
KVS	80	5 : 7	4 : 5
DAV	75	3 : 4	3 : 2
BVV	64	5 : 4	13 : 5
BPS	72	1 : 3	5 : 9
TNCS	70	2 : 3	4 : 5

Q6. If the ratio of failed male students of KVS to passed male students of BVV is 1 : 4 while sum of passed female students of BVV and failed female students of KVS is 160, then find the number of appearing students in KVS.

- (a) 450
- (b) 420
- (c) 360
- (d) 350
- (e) None of these

56. Ans.(c)

Sol.

$$\frac{5}{9} \times \frac{20}{100} \times K = \frac{1}{4}$$

$$\frac{5}{9} \times \frac{64}{100} \times B = \frac{1}{4}$$

$$\text{or, } \frac{K}{B} = \frac{4}{5} \dots (i)$$

$$\text{Also, } \frac{4}{9} \times \frac{64}{100} \times B + \frac{4}{9} \times \frac{20}{100} \times K = 160$$

$$\Rightarrow 16B + 5K = 9000 \dots (ii)$$

From (i) and (ii)

$$B = 450 \text{ and } K = 360$$

Q7. If passed students of KVS are 700/9% more than failed students of BVV, then by what percent passed female students of KVS are more than passed male students of BVV?

- (a) 8%
- (b) 12%
- (c) 6%
- (d) 5%
- (e) None of these

57. Ans.(d)

Sol.

$$\frac{80}{100} \times K = \left(1 + \frac{7}{9}\right) \times \frac{36}{100} \times B$$

$$\Rightarrow 5K = 4B$$

$$\text{Passed females of KVS} = \frac{7}{12} \times \frac{80}{100} \times K = \frac{7}{15} K = \frac{7}{15} \times \frac{4}{5} B = \frac{28}{75} B$$

$$\text{Passed males of BVV} = \frac{5}{9} \times \frac{64}{100} \times B = \frac{16}{45} B$$

$$\therefore \text{ Required percent} = \frac{\frac{28}{75} - \frac{16}{45}}{\frac{16}{45}} \times 100 = 5\%$$

Q8. If failed male and female students of KVS and TNCS respectively are same in number, then find that passed male students of KVS are what percent of failed male students of TNCS ?

- (a) 120%
- (b) 240%
- (c) 220%
- (d) 250%
- (e) 180%

S8. Ans.(b)

Sol.

$$\frac{\frac{5}{9} \times \frac{20}{100} \times K}{\frac{4}{9} \times \frac{30}{100} \times T} = \frac{1}{1}$$

$$\Rightarrow 5K = 6T$$

$$\therefore \text{Required percentage} = \frac{\frac{5}{12} \times \frac{80}{100} \times K}{\frac{5}{9} \times \frac{30}{100} \times \frac{5}{6} K} = 240\%$$

Q9. It is known that number of appearing students of BPS is 350 which is 200/3% more than the number of passed students of TNCS. Find by what percent failed males of TNCS are more than failed females of BPS.

- (a) $41\frac{3}{7}\%$
- (b) $42\frac{2}{5}\%$
- (c) $42\frac{6}{7}\%$
- (d) $40\frac{6}{7}\%$
- (e) None of these

S9. Ans.(c)

Sol.

Number of pass students of TNCS

$$= \left(\frac{1}{1 + \frac{2}{3}} \right) \times 350 = 210$$

\therefore Total appearing students of TNCS

$$= \frac{100}{70} \times 210 = 300$$

Failed males of TNCS

$$= \frac{5}{9} \times \frac{30}{100} \times 300 = 50$$

And failed females of BPS

$$= \frac{5}{14} \times \frac{28}{100} \times 350 = 35$$

$$\therefore \text{Required percentage} = \frac{15}{35} \times 100 = 42\frac{6}{7}\%$$

Q10. Passed students of DAV are what percent of passed students of TNCS ? (appeared students of DAV are 8.4 times failed male of TNCS)

- (a) 125%
- (b) 50%
- (c) 80%
- (d) 150%
- (e) None of these

S10. Ans.(d)

Sol.

$$D = 8.4 \left(\frac{5}{9} \times \frac{30}{100} \times T \right)$$

$$\Rightarrow D = \frac{7}{5} T$$

$$\therefore \text{Required percentage} = \frac{\frac{75}{100} \times \frac{7}{5} T}{\frac{70}{100} \times T} \times 100 = 150\%$$

S11. Ans.(b)

Sol.

Required number of windows phones

$$= \frac{7}{18} \times \frac{22}{100} \times 9000 + \frac{3}{10} \times \frac{24}{100} \times 9000$$

$$= 770 + 648$$

$$= 1418$$

Directions (11-15): Study the following data related to the sales distribution of mobiles phones by five shopkeepers in June, 2017. Total sells of all five shopkeepers in June, 2017 is considered to be 100%.

Shopkeeper	Total sold mobiles	Windows Phone : Android Phone
P	22%	7 : 11
Q	24%	3 : 7
R	1350	7 : 8
S	18%	11 : 9
T	21%	9 : 5

Q11. Find the total number of Windows phone sold by P and Q together ?

- (a) 1814
- (b) 1418
- (c) 1481
- (d) 1148
- (e) None of these

S11. Ans.(b)

Sol.

Required number of windows phones

$$= \frac{7}{18} \times \frac{22}{100} \times 9000 + \frac{3}{10} \times \frac{24}{100} \times 9000$$

$$= 770 + 648$$

$$= 1418$$

Q12. Android phones sold by S are by what number more or less than the windows phones sold by R (rounded upto two decimal places)?

- (a) 20.05%
- (b) 12.21%

- (c) 18.54%
- (d) 15.71%
- (e) 23.35%

S12. Ans.(d)

Sol.

$$\text{Android phones sold by S} = \frac{9}{20} \times \frac{18}{100} \times 9000 = 729$$

$$\text{Windows phones sold by R} = \frac{7}{15} \times 1350 = 630$$

$$\therefore \text{Required percentage} = \frac{729 - 630}{630} \times 100 \approx 15.71\%$$

Q13. The sells of Q and S increased by $5\frac{2}{9}\%$ and $3\frac{4}{27}\%$ respectively in July 2017 than previous month.

Find the total mobiles sold by Q and S in July, 2017 ?

- (a) 3690
- (b) 3660
- (c) 3960
- (d) 3990
- (e) None of these

S13. Ans.(c)

Sol.

$$\begin{aligned} \text{Sales of Q in July} &= \left(100 + \frac{50}{9}\right)\% \text{ of } \frac{24}{100} \times 9000 \\ &= \frac{950}{900} \times \frac{24}{100} \times 9000 = 2280 \end{aligned}$$

$$\begin{aligned} \text{Sales of S in July} &= \left(100 + \frac{100}{27}\right)\% \text{ of } \frac{18}{100} \times 9000 \\ &= \frac{2800}{2700} \times \frac{18}{100} \times 9000 \\ &= 1680 \end{aligned}$$

$$\therefore \text{Total phones sold} = 2280 + 1680 = 3960$$

Q14. Find the ratio of number of Windows phones sold by P to that of Window phones sold by R.

- (a) 11 : 9
- (b) 4 : 9
- (c) 5 : 9
- (d) 5 : 8
- (e) None of these

S14. Ans.(a)

Sol.

$$\text{Required ratio} = \frac{\frac{7}{18} \times \frac{22}{100} \times 9000}{\frac{7}{15} \times \frac{15}{100} \times 9000} = 11 : 9$$

Q15. Find the difference in the average of Windows phones sold by P and Q and average of Android phones sold by S and T.

- (a) 20
- (b) 30
- (c) 40
- (d) 5
- (e) None of these

S15. Ans.(e)

Sol.

Average of windows phones sold by P and Q

$$= \frac{1}{2} \times 1418$$

$$= 709$$

Average of android phones sold by S & T

$$= \frac{1}{2} \left(729 + \frac{5}{14} \times \frac{21}{100} \times 9000 \right)$$

$$= \frac{1}{2} (729 + 675)$$

$$= 702$$

$$\therefore \text{Required difference} = 709 - 702 = 7$$

Directions (6-10): The following table shows the total number of employees working in company WIPRO and ratio of men to women over six different years. Study the table and answer the questions that follow.

Years	Total number of employees	Men: Woman
2002	8,00,000	7 : 3
2003	8,50,000	11 : 6
2004	9,54,500	3 : 2
2005	9,80,500	11 : 9
2006	8,65,000	13 : 12
2007	9,25,000	1 : 1

Q6. Find the approximate average no. of women employees in the year 2002 and 2006 together.

- (a) 327600
- (b) 385550
- (c) 426500
- (d) 456500
- (e) 520500

Q7. The women employees working in the company in the years 2003 and 2005 together are what percent of total employees in the year 2003? (up to two decimal place)

- (a) 81.50%
- (b) 91.25%
- (c) 87.20%
- (d) 105.12%
- (e) 75.05%

- Q8. If 20% employees are fired in the year 2007, then find the no. of women employees who got fired in 2007?
- (a) 85,500
 - (b) 1,05,000
 - (c) Cannot be determined
 - (d) 92,500
 - (e) 1,10,500

- Q9. What is the difference between no. of male employees in years 2003, 2004 and 2007 together and no. of female employees in the same years together?
- (a) 4,40,900
 - (b) 5,50,000
 - (c) 6,55,000
 - (d) 7,65,000
 - (e) 6,58,00

- Q10. In which year, the gap between man and woman employees is maximum
- (a) 2002
 - (b) 2003
 - (c) 2005
 - (d) 2006
 - (e) 2007

Solutions (6-10):

S6. Ans.(a)

Sol.

Required average no. of women employees

$$\begin{aligned}
 &= \frac{1}{2} \times (3 \times 80000 + 12 \times 34600) \\
 &= \frac{1}{2} \times 655200 \\
 &= 327600
 \end{aligned}$$

S7. Ans.(c)

Sol.

Women working in company in years 2003 and 2005

$$\begin{aligned}
 &= \frac{6}{17} \times 850000 + \frac{9}{20} \times 980500 \\
 &= 300000 + 441225 \\
 &= 7,41,225
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{Required percentage} &= \frac{741225}{850000} \times 100 \\
 &= 87.20\%
 \end{aligned}$$

S8. Ans.(c)

Sol.

Cannot be determined.

S9. Ans.(a)

Sol.

Required difference

$$= (11 \times 50000 + 3 \times 190900 + 462500) - (6 \times 50000 + 2 \times 190900 + 462500)$$

$$= 4,40,900$$

S10. Ans.(a)

Sol.

Gap in man and woman employees in year 2002

$$= 4 \times 80000$$

$$= 320000$$

In year 2003

$$= 5 \times 50000$$

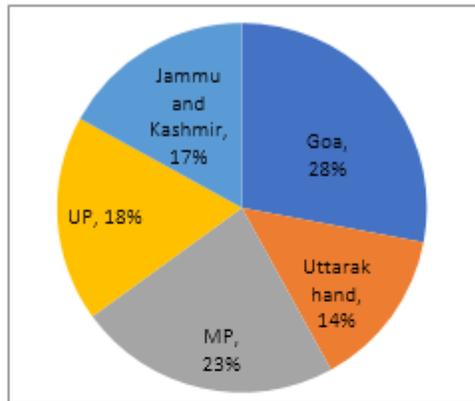
$$= 250000$$

In rest years gap looks smaller than the above data calculated

∴ maximum gap is in year = 2002

Directions (11-15): Study the following pie chart and table carefully to answer the following questions that follow:
Percentage break up of tourist who visited across various states of India and the ratio of men to women in them
Total Number of tourists = 1800

Percentage Break up of tourist



Ratio of Male to female tourist		
States	Male	female
Goa	13	1
Uttarakhand	2	5
MP	12	11
UP	5	1
Jammu and Kashmir	5	12

Q11. What is the number of male tourists who visited of Goa and MP together?

- (a) 632
- (b) 674
- (c) 684
- (d) 649
- (e) None of these

S11. Ans.(c)

Sol.

Required number of male tourist visited of Goa and MP together

$$\begin{aligned}
 &= \frac{13}{14} \times \frac{28}{100} \times 1800 + \frac{12}{23} \times \frac{23}{100} \times 1800 \\
 &= 468 + 216 \\
 &= 684
 \end{aligned}$$

Q12. The number of female tourists who visited MP are what per cent of the total number of tourists who visited all states together?

- (a) 7
- (b) 5
- (c) 19
- (d) 15
- (e) 11

S12. Ans.(e)

Sol.

Required percentage of female tourist

$$\begin{aligned}
 &= \frac{\left(\frac{11}{23} \times \frac{23}{100} \times 1800\right)}{1800} \times 100 \\
 &= 11\%
 \end{aligned}$$

Q13. What is the respective ratio of the number of female tourists who visited Uttarakhand and Jammu & Kashmir together to the total number of tourist who visited above mentioned two states together?

- (a) 35 : 33
- (b) 23 : 51
- (c) 22 : 31
- (d) 3 : 7
- (e) None of these

S13. Ans.(c)

Sol.

Number of female tourist who visited of Uttarakhand and Jammu & Kashmir together

$$\begin{aligned}
 &= \frac{5}{7} \times 1800 \times \frac{14}{100} + \frac{12}{17} \times \frac{17}{100} \times 1800 \\
 &= (180+216) \\
 &= 396
 \end{aligned}$$

And, Total no. of tourist who visited of these states

$$\begin{aligned}
 &= \frac{14}{100} \times 1800 + \frac{17}{100} \times 1800 \\
 &= 558
 \end{aligned}$$

$$\therefore \text{Required ratio} = \frac{396}{558} = 22:31$$

Q14. What is the approximate average no. of male tourists who visited all the states together?

- (a) 212
- (b) 210
- (c) 223
- (d) 208
- (e) 206

S14. Ans.(c)

Sol.

$$\begin{aligned} \text{Required average} &= \frac{1}{5} \left(\frac{13}{14} \times 28 + \frac{2}{7} \times 14 + \frac{12}{23} \times 23 + \frac{5}{6} \times 18 + \frac{5}{17} \times 17 \right) \times 18 \\ &= \frac{1}{5} (468 + 72 + 216 + 270 + 90) \\ &= \frac{223.2}{1} \\ &\approx 223 \end{aligned}$$

Q15. The number of male tourist who visited Goa are what per cent of total number of tourist who visited Goa?

- (a) $89\frac{5}{9}$
- (b) $92\frac{6}{7}\%$
- (c) $88\frac{3}{4}$
- (d) 94
- (e) None of these

S15. Ans.(b)

Sol.

Male tourist who visited Goa

$$\begin{aligned} &= \frac{13}{14} \times 1800 \times \frac{28}{100} \\ &= 468 \end{aligned}$$

Total tourist who visited Goa

$$\begin{aligned} &= \frac{28}{100} \times 1800 \\ &= 504 \end{aligned}$$

$$\therefore \text{Required percentage} = \frac{468}{504} \times 100 = 92\frac{6}{7}\%$$

Alternate,

$$\therefore \text{Required percentage} = \frac{13}{14} \times 100 = 92\frac{6}{7}\%$$

The given table shows the no. of branches of Axis bank in 5 different City, total no. of employee in that city and the respective ratio of male to female employees in city.

City	Branch	Total no. of employee	Male to female Ratio
Delhi	16	240	7 : 5
Bhopal	18	360	13 : 5
Hyderabad	14	168	4 : 3
Nagpur	22	352	9 : 7
Surat	24	480	5 : 3

Q11. Find the ratio of female employee working in Delhi's and Bhopal's branches together to male employee working in Surat's branch

- (a) 5 : 4
- (b) 2 : 3
- (c) 7 : 5
- (d) 9 : 4
- (e) 4 : 9

Quant based DI



Q12. Average no. of female employee working in each branch of Nagpur are how much percent more or less than average no. of female employee working in each branch of Surat.

- (a) $4\frac{1}{2}\%$
- (b) 8%
- (c) 16%
- (d) $12\frac{1}{3}\%$
- (e) $6\frac{2}{3}\%$

Q13. Find total no. of female employee working in these 5 cities.

- (a) 606
- (b) 644
- (c) 498
- (d) 541
- (e) 675

Q14. If 30% employee from Delhi are post graduate and ratio of male to female post graduate employee in Delhi is 5 : 3. Then find the difference of non-post graduate male employee and non-post graduate female employee in Delhi .

- (a) 41
- (b) 22
- (c) 33
- (d) 17
- (e) 29

Q15. If 33 male employees and 15 female employee retires from Nagpur zone, then in remaining employee male employees are how much percent of female employee.

- (a) $165\frac{1}{2}\%$
- (b) $91\frac{2}{5}\%$
- (c) $111\frac{2}{3}\%$
- (d) $118\frac{98}{139}\%$
- (e) $137\frac{1}{6}\%$

Solutions (11-15):

S11. Ans.(b)

$$\begin{aligned} \text{Sol. Required ratio} &= \frac{\frac{5}{12} \times 240 + \frac{5}{18} \times 360}{\frac{5}{8} \times 480} \\ &= \frac{100 + 100}{300} = \frac{2}{3} \\ &= 2 : 3 \end{aligned}$$

S12. Ans.(e)

Sol. Total female employee working in Nagpur

$$\begin{aligned} &= \frac{7}{16} \times 352 \\ &= 154 \end{aligned}$$

$$\text{Average of female employee working in each branch of Nagpur} = \frac{154}{22} = 7$$

$$\begin{aligned} \text{Total female employee working in Surat} &= \frac{3}{8} \times 480 \\ &= 180 \end{aligned}$$

$$\text{Average of female employee working in each branch of Surat} = \frac{180}{24} = \frac{15}{2}$$

$$\begin{aligned} \text{Required percent} &= \frac{\frac{15}{2} - 7}{\frac{15}{2}} \times 100 \\ &= 6\frac{2}{3}\% \end{aligned}$$

S13. Ans.(a)

$$\begin{aligned} \text{Sol. Total female employee} &= \frac{5}{12} \times 240 + \frac{5}{18} \times 360 + \frac{3}{7} \times 168 + \frac{7}{16} \times 352 + \frac{3}{8} \times 480 \\ &= 100 + 100 + 72 + 152 + 180 \\ &= 606 \end{aligned}$$

S14. Ans.(b)

Sol. Total male employee from Delhi = $\frac{7}{12} \times 240$
= 140

Total female employee from Delhi = $\frac{5}{12} \times 240$
= 100

Post graduate employee from Delhi = $\frac{30}{100} \times 240$
= 72

Male post graduate employee from Delhi = $\frac{5}{8} \times 72 = 45$

Female post graduate employee from Delhi = $\frac{3}{8} \times 72 = 27$

Non- post graduate male employee from Delhi = $140 - 45 = 95$

Non-post graduate female employee from Delhi = $100 - 27 = 73$

Required difference = $95 - 73 = 22$

S15. Ans.(d)

Sol. Total employee in Nagpur zone = 352

Total male employee in Nagpur zone = $\frac{9}{16} \times 352 = 198$

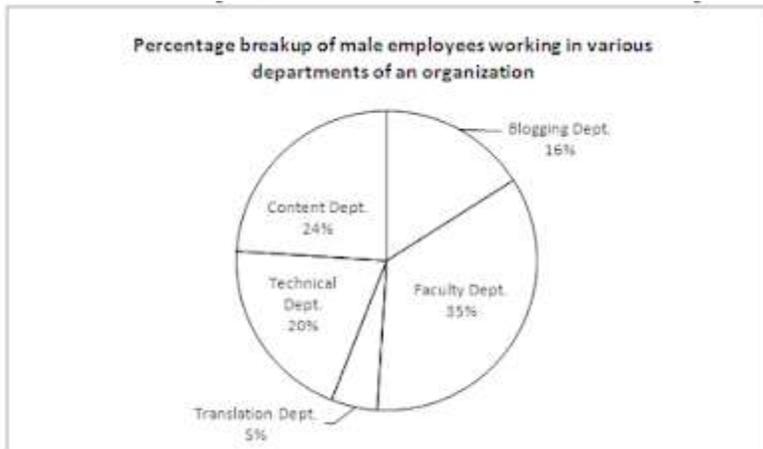
Total female employee in Nagpur zone = $\frac{7}{16} \times 352 = 154$

Male employee remaining after retirement = $198 - 33 = 165$

Female employee remaining after retirement = $154 - 15 = 139$

Required percentage $\frac{165}{139} \times 100 = 118 \frac{98}{139} \%$

Number of male in the organization is two times of the number of females in the organization



Number of females in Each Department	
Faculty Department	2400
Blogging Department	3200
Translation Department	2800
Technical Department	3800
Content Department	2100

Q11. Number of males in Blogging, Technical and Content department together are approximately what percent more/less than the total number of females in the same departments?

- (a) 85%
- (b) 89%
- (c) 94%
- (d) 79%
- (e) 95%

Q12. Out of the total number of employees from Translation department, 30% of the employees got promoted then find the ratio of the number of employees from Translation department who get promoted to the total number of male employees in the organization ?

- (a) 28600 : 1269
- (b) 1170 : 28779
- (c) 1269 : 14300
- (d) 1269 : 28600
- (e) 28779 : 1170

Q13. If one male from Faculty can do a work in 20020 days and the female from Faculty are 20% less efficient than that of male in Faculty. Find the total no. of employees from Faculty to do the same job?

- (a) $\frac{2002}{2009}$ Days
- (b) $\frac{2002}{1096}$ Days
- (c) $\frac{1008}{1001}$ Days
- (d) $\frac{2002}{2097}$ Days
- (e) $\frac{2097}{2002}$ Days

Q14. Find the difference between the average number of males in all departments of the organization and the average number of females in all departments of the organization?

- (a) 2860
- (b) 2440
- (c) 2630
- (d) 2920
- (e) None of these

Q15. If some male employees from Content Department shifted to Blogging department and some female employees from Blogging departments shifted to Content departments such that total number of male employees and female employees in Content Department are same as total number of male employee and female employee in Blogging departments respectively. Now find the Average of the number of female employees from Content and male employee in Blogging department together?

- (a) 4195
- (b) 4185
- (c) 4220
- (d) 5210
- (e) Can't be determined

Solutions (11-15)

Departments	Male	Female
Faculty Dept.	10010	2400
Blogging Dept.	4576	3200
Translation Dept.	1430	2000
Technical Dept.	5720	3800
Content Dept.	6864	2100
Total	28600	14300

S11. Ans.(b)

Sol.

Number of male in Blogging, Technical and Content Dept. = $4576 + 5720 + 6864 = 17160$

Number of female in Blogging, Technical and Content Dept. = $3200 + 3800 + 2100 = 9100$

$$\text{Required \%} = \frac{17160 - 9100}{9100} \times 100$$

$$= \frac{8060}{9100} \times 100$$

$$= 88.57\% \approx 89\%$$

S12. Ans.(d)

Sol.

$$\text{Required Ratio} = \frac{30}{100} (2800 + 1430) : 28,600$$

$$= 1269 : 28600$$

S13. Ans.(d)

Sol.

M → 20020 days

F → 25025 days

Required No. of days

$$\frac{1}{\frac{10010}{20020} + \frac{2400}{25025}}$$

$$= \frac{1}{\frac{1}{2} + \frac{96}{1001}}$$

$$= \frac{1}{2097}$$

$$= \frac{2002}{2097} \text{ days}$$

S14. Ans.(a)

Sol.

$$\text{Required difference} = \frac{1}{5} (28600 - 14300)$$

$$= \frac{1}{5} \times 14300$$

$$= 2860$$

S15. Ans.(b)

Sol.

$$\text{Now, Male employees in Content Dept.} = \text{Male employee in Blogging Dept.} = \frac{4576 + 6864}{2}$$

$$= 5720$$

And female employees in Content Dept. = Female employee in Blogging Dept.

$$= \frac{3200 + 2100}{2}$$

$$= 2650$$

$$\text{Required average} = \frac{5720 + 2650}{2}$$

$$= 4185$$