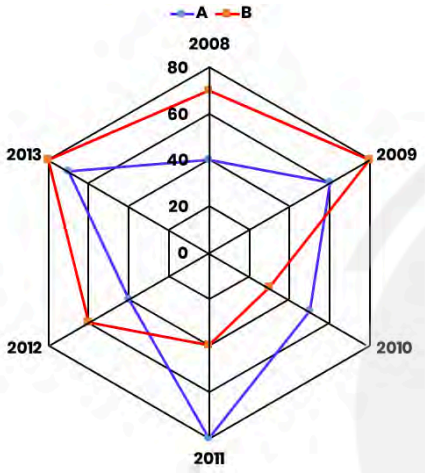
Quantitative Aptitude

Radar Graph Based Data Interpretations

Level-1

Directions (1-5) Read the following passage and answer the given questions.

The following diagram gives the sales of two different companies A and B operating in the same field during 2008-13 (in crores).



Q1 What is the total sales of both the companies combined in 2010?

(A) 90 crores (B) 80 crores
(C) 60 crores (D) 70 crores
(E) 100 crores

Q2 Company A's sales was what percent more than company B's sales in 2011?

(A) 100% (B) 80%
(C) 120% (D) 110%
(E) 70%

Q3 What is the average sales of company B for the entire given period?

(A) 80 crores (B) 30 crores
(C) 40 crores (D) 50 crores
(E) 60 crores

Q4 What is the difference in total sales of both the companies during the given period (in crores)?

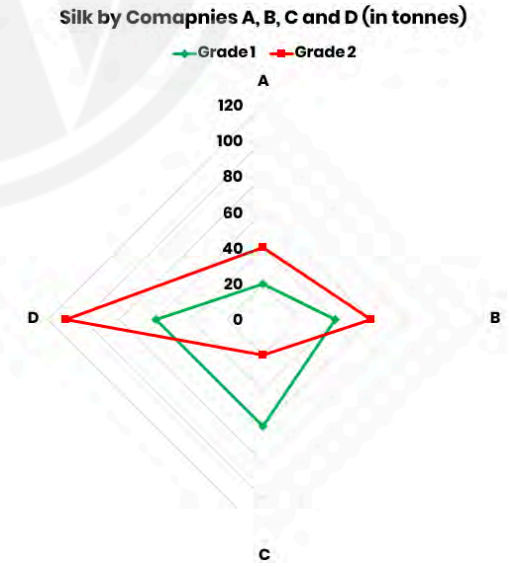
(A) 10 (B) 30
(C) 20 (D) 60
(E) 40

Q5 In 2012 these two companies had 25% of the market share. What is the total market size of the industry (in crores)?

(A) 600 (B) 180
(C) 200 (D) 400
(E) 220

Directions (6-10) Read the following passage and answer the given questions.

Directions: Study the radar chart given below and answer the following questions.



Use the given data to answer the following questions.

Grade	Rate/Tonne
1	Rs. 75000
2	Rs. 60000

Q6 What is the difference between the average sales of grade 1 and 2 in all 4 companies?
(A) 10 tonnes (B) 15 tonnes
(C) 20 tonnes (D) 25 tonnes
(E) 30 tonnes

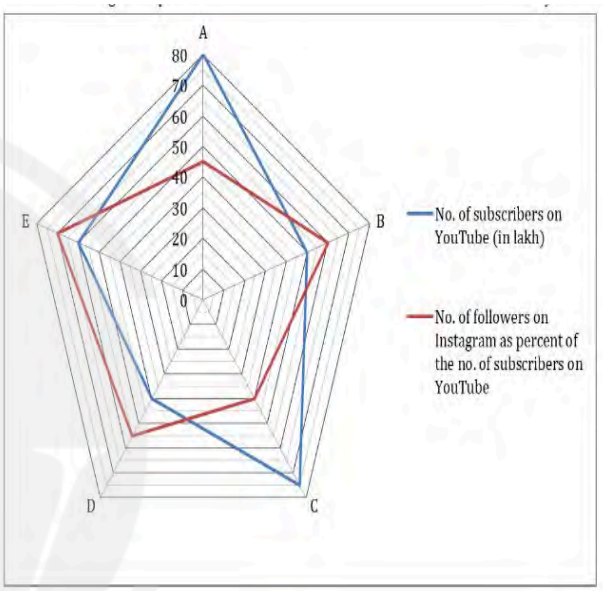
Q7 What is the difference between the total income of companies C and A?
(A) 1.00005 million.
(B) 1.5 million.
(C) 1.005 million.
(D) 10.05 million
(E) 1.05 million.

Q8 In how many companies is the production of grade 2 silk at least 50% more than that of grade 1?
(A) 1 (B) 2
(C) 3 (D) 0
(E) 4

Q9 What percentage of the net income of company A is constituted by grade 1 silk?
(A) 38.46% (B) 25%
(C) 50% (D) 33.33%
(E) 20%

Q10 Total production by company D is what percentage of that of company B?
(A) 140% (B) 120%
(C) 150% (D) 160%
(E) 170%

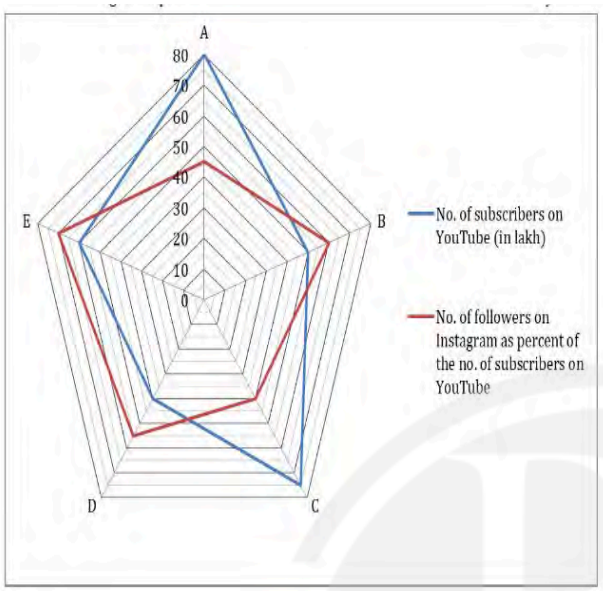
Q11 Directions: Study the data carefully and answer the following questions.
Data given below is related to the number of subscribers on YouTube (in lakh) and number of followers on Instagram (in lakh) of five different celebrities A, B, C, D and E.
Radar graph given below shows the number of subscribers on YouTube (in lakh) and number of followers on Instagram as percent of the number of subscribers on YouTube of each celebrity.



If B has $66\frac{2}{3}\%$ male followers on Instagram and E has $71\frac{3}{7}\%$ male followers on Instagram, then find the ratio of number of female followers of B to those of female followers of E on Instagram?
(A) 5: 6 (B) 2: 3
(C) 10: 11 (D) 5: 7
(E) None of these

Q12 Directions: Study the data carefully and answer the following questions.
Data given below is related to the number of subscribers on YouTube (in lakh) and number of followers on Instagram (in lakh) of five different celebrities A, B, C, D and E.

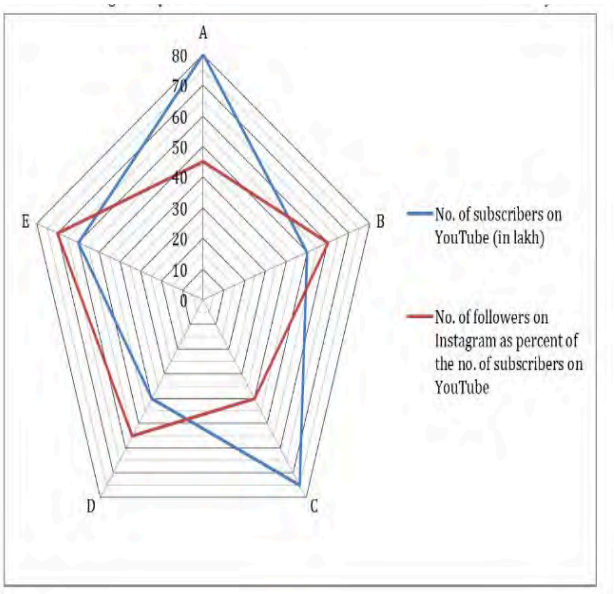
Radar graph given below shows the number of subscribers on YouTube (in lakh) and number of followers on Instagram as percent of the number of subscribers on YouTube of each celebrity.



FInd the difference between total number of subscribers of B, C and D together on YouTube and total number of followers of B, C and D together on Instagram?

(A) 63 lakh (B) 93 lakh
(C) 73 lakh (D) 103 lakh
(E) None of these

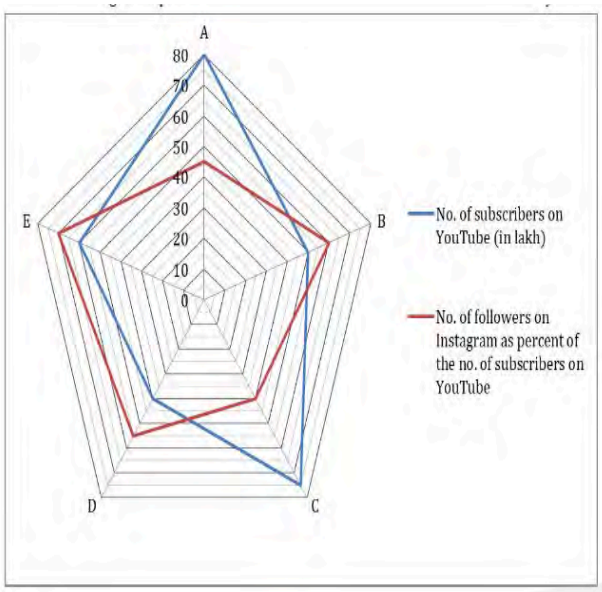
Q13 Directions: Study the data carefully and answer the following questions.
Data given below is related to the number of subscribers on YouTube (in lakh) and number of followers on Instagram (in lakh) of five different celebrities A, B, C, D and E.
Radar graph given below shows the number of subscribers on YouTube (in lakh) and number of followers on Instagram as percent of the number of subscribers on YouTube of each celebrity.



If number of subscribers of F on YouTube is 80% of those of A on YouTube and number of followers of F on Instagram is $133\frac{1}{3}\%$ of those of A on Instagram, then find the ratio of number of F's subscribers on YouTube to the number of F's followers on Instagram?

(A) 8: 7 (B) 16: 13
(C) 32: 29 (D) 4: 3
(E) None of these

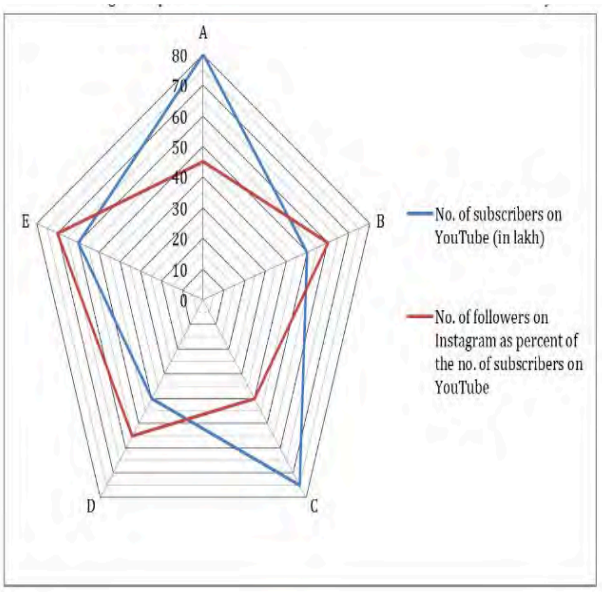
Q14 Directions: Study the data carefully and answer the following questions.
Data given below is related to the number of subscribers on YouTube (in lakh) and number of followers on Instagram (in lakh) of five different celebrities A, B, C, D and E.
Radar graph given below shows the number of subscribers on YouTube (in lakh) and number of followers on Instagram as percent of the number of subscribers on YouTube of each celebrity.



If number of followers on Instagram of each celebrity are described in a circle, then what will be the degree distribution of the number of D's followers on Instagram?

(A) 37.4° (B) 89.1°
(C) 49.5° (D) 59.4°
(E) None of these

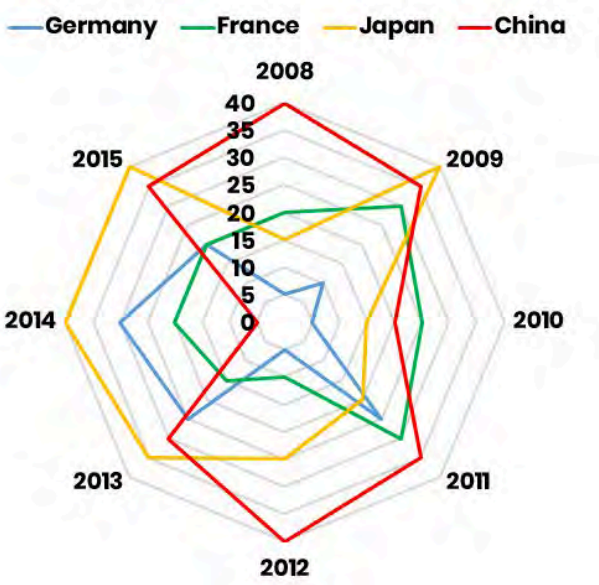
Q15 Directions: Study the data carefully and answer the following questions.
Data given below is related to the number of subscribers on YouTube (in lakh) and number of followers on Instagram (in lakh) of five different celebrities A, B, C, D and E.
Radar graph given below shows the number of subscribers on YouTube (in lakh) and number of followers on Instagram as percent of the number of subscribers on YouTube of each celebrity.



Find the average of total number of subscribers of A and E together on YouTube and total number of followers of A and E together on Instagram?

(A) 98 lakh (B) 115 lakh
(C) 91 lakh (D) 100 lakh
(E) 109 lakh

Directions (16-20) Read the following passage and answer the given questions.
The following Radar Graph shows the number of new companies registered (in thousands) in four countries in various years. Study the data carefully and answer the following questions.



Q16 In which year is the average number of companies registering the maximum?

(A) 2007 (B) 2008
(C) 2009 (D) 2010
(E) 2013

Q17 The number of companies registered in 2015 is what % more/less than the same value in 2008 (approximately)?

(A) 41.28% (B) 47.10%
(C) 40.40% (D) 43.75%
(E) 44.23%

Q18 What is the ratio of the number of companies registered in Japan to that in China during 2008 to 2015?

(A) 23:25 (B) 23:24
(C) 24:25 (D) 24:23
(E) 25:24

Q19 In which country is the average number of companies registering the maximum?

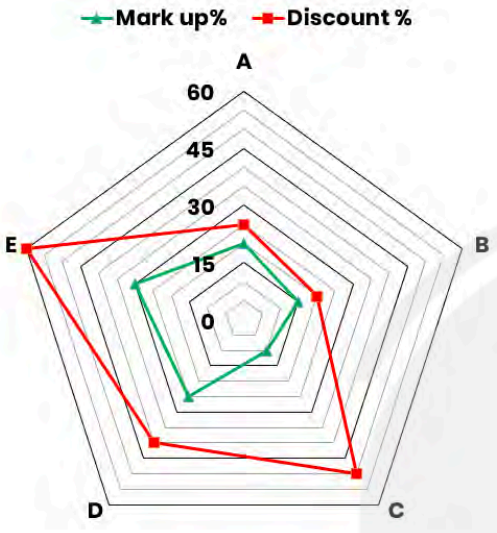
(A) 240,000 (B) 250,000
(C) 260,000 (D) 270,000
(E) 280,000

Q20 The total number of companies registered in France is what approximate % more/less than that in China?

(A) 22% (B) 24%
(C) 26% (D) 29%
(E) 27%

Level-2

Directions (1-5) Read the following passage and answer the given questions.
Directions: (1-5) Study the radar chart given below and answer the following questions.
Radar chart shows the markup % and discount % on five different articles sold by a shopkeeper.



Important points:

- Mark up % on any article=[(Marked Price-Cost Price) of that article)/Cost Price of that article]*100
- Discount % on any article=[(Marked Price-Selling Price) of that article)/Marked Price of that article]*100

Q1 If ratio of selling price of A to that of C is 40 : 27, then find marked price of C is what percent of cost price of A?
(A) 75% (B) 50%
(C) 25% (D) 45%
(E) 30%

Q2 If selling price of D is 40% more than marked price of B and selling price of B is Rs.290 less than cost price of D, then find the total profit earned by shopkeeper on selling 1 unit each of B & D?
(A) Rs. 40 (B) Rs. 30
(C) Rs. 20 (D) Rs. 50
(E) Rs. 70

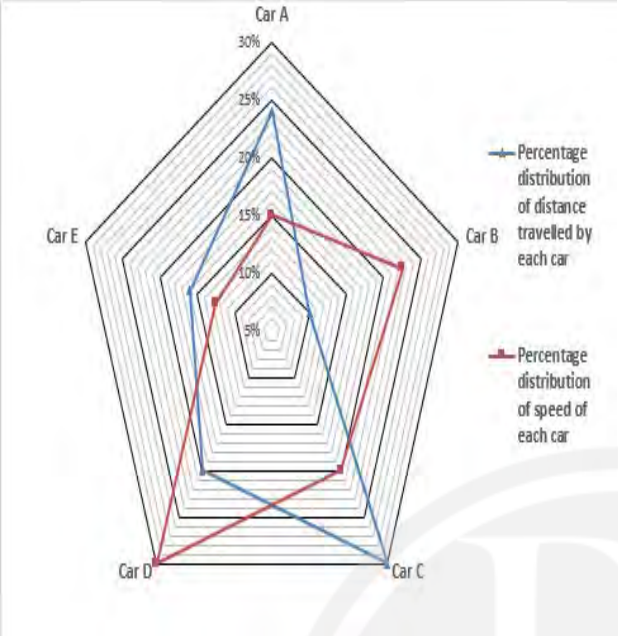
Q3 If shopkeeper earned total profit of Rs.36 on selling A & E, then find amount of discount allowed on E.
(A) Rs 125 (B) Rs 144
(C) Rs 180 (D) Rs 124
(E) Rs 100

Q4 If selling price of C & E together is Rs.2200 and ratio of cost price of C to selling price of E is 5 : 7, then find difference in marked prices of C & E.
(A) Rs.400 (B) Rs.420
(C) Rs.440 (D) Rs.460
(E) Rs.480

Q5 If selling price of A & B together is Rs.2330 and marked price of B is Rs.800 more than that of A, then find cost price of B is what percent of cost price of A?
(A) 100% (B) 150%
(C) 133.33% (D) 187.5%
(E) 109.01%

Q6 **Directions: Answer the questions based on the information given below.**
The radar chart given below represents the percentage distribution of the distance (in km) travelled by five different cars out of the total distance (in km) travelled by all the five cars together. Time taken by car A to travel its respective distance (in km) is 24 hours and the radar chart below represents the percentage

distribution of the speed (in km/hr) of each car out of the sum of speeds (in km/hr) of all the five cars together.

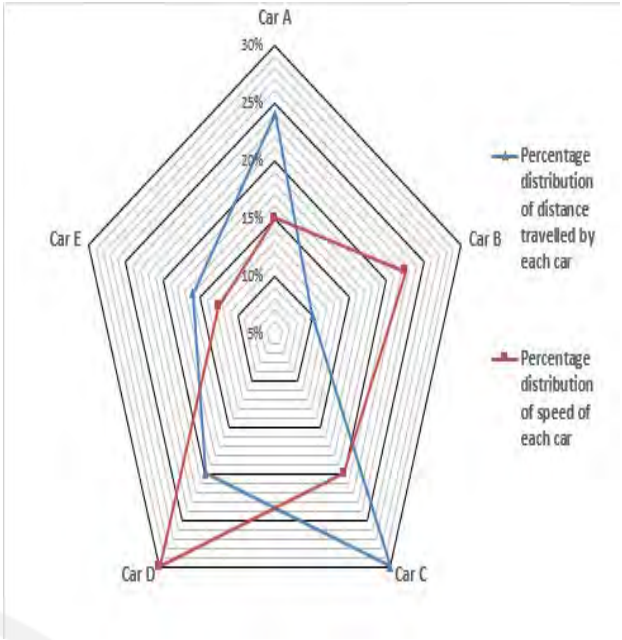


Q. Find the difference between time taken by car C and car D to travel its respective distances.

(A) 7.5 hours (B) 10 hours
(C) 15 hours (D) 12.5 hours
(E) None of these

Q7 Directions: Answer the questions based on the information given below.

The radar chart given below represents the percentage distribution of the distance (in km) travelled by five different cars out of the total distance (in km) travelled by all the five cars together. Time taken by car A to travel its respective distance (in km) is 24 hours and the radar chart below represents the percentage distribution of the speed (in km/hr) of each car out of the sum of speeds (in km/hr) of all the five cars together.

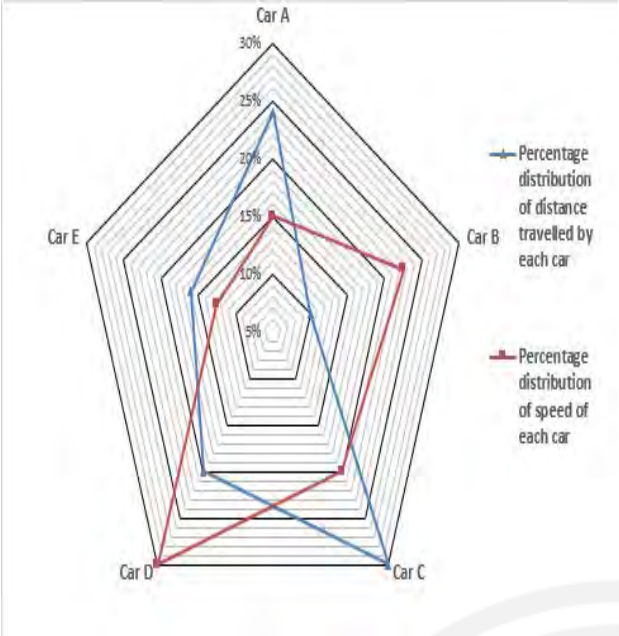


Q. Find the ratio of time taken by car B to car E to cover its respective distances.

(A) 18: 29 (B) 25: 72
(C) 28: 83 (D) 16: 45
(E) 12: 31

Q8 Directions: Answer the questions based on the information given below.

The radar chart given below represents the percentage distribution of the distance (in km) travelled by five different cars out of the total distance (in km) travelled by all the five cars together. Time taken by car A to travel its respective distance (in km) is 24 hours and the radar chart below represents the percentage distribution of the speed (in km/hr) of each car out of the sum of speeds (in km/hr) of all the five cars together.

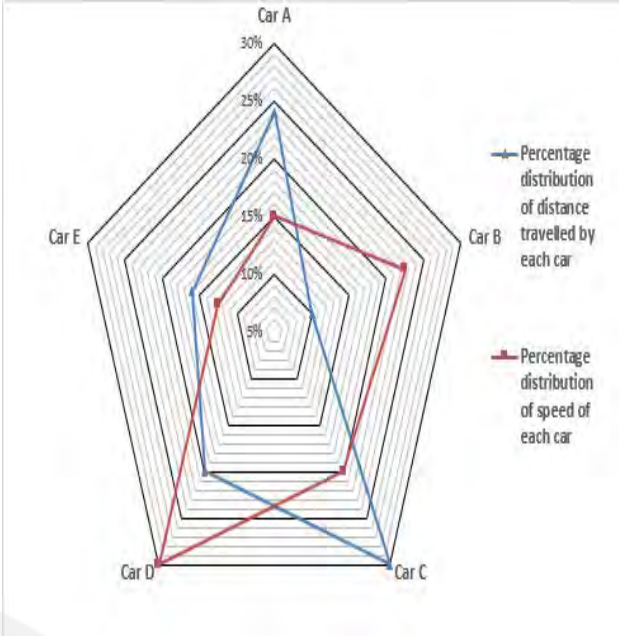


Q. Find the difference between the speed of car D and that of car E, if distance travelled by car B is 600 km.

(A) 70 km/hr (B) 65 km/hr
(C) 60 km/hr (D) 80 km/hr
(E) 50 km/hr

Q9 Directions: Answer the questions based on the information given below.

The radar chart given below represents the percentage distribution of the distance (in km) travelled by five different cars out of the total distance (in km) travelled by all the five cars together. Time taken by car A to travel its respective distance (in km) is 24 hours and the radar chart below represents the percentage distribution of the speed (in km/hr) of each car out of the sum of speeds (in km/hr) of all the five cars together.

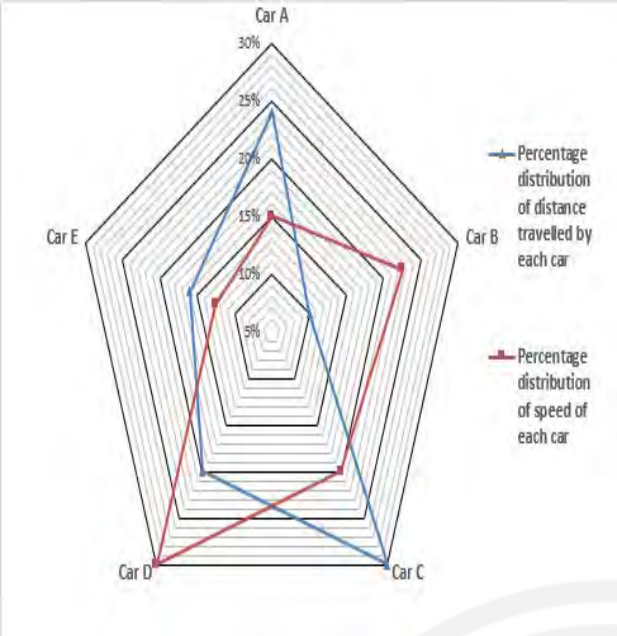


Q. Find the difference between the distances travelled by car A and car C if the difference between the speeds of car B and car C is 10 km/hr.

(A) 320 km (B) 600 km
(C) 540 km (D) 360 km
(E) 480 km

Q10 Directions: Answer the questions based on the information given below.

The radar chart given below represents the percentage distribution of the distance (in km) travelled by five different cars out of the total distance (in km) travelled by all the five cars together. Time taken by car A to travel its respective distance (in km) is 24 hours and the radar chart below represents the percentage distribution of the speed (in km/hr) of each car out of the sum of speeds (in km/hr) of all the five cars together.

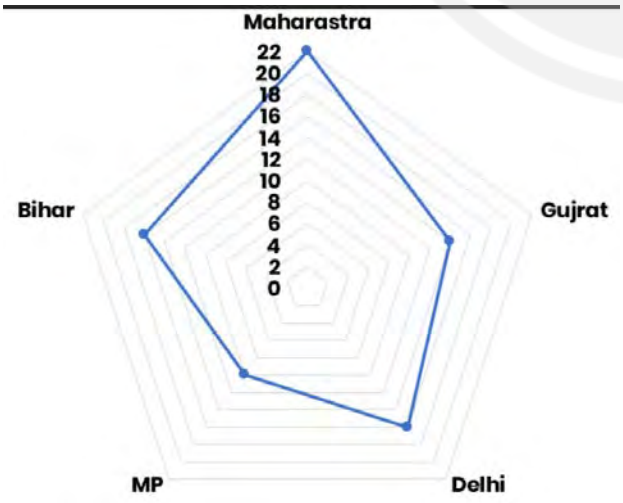


Q. Which car has taken least time to cover its respective distance?

(A) Car A (B) Car B
(C) Car C (D) Car D
(E) Car E

Directions (11-15) Read the following passage and answer the given questions.

The following radar graph shows the percentage of 12th Qualified persons out of total population of 5 states.



State	Total population	Male: Female (12th Qualified)
Delhi	15000	3:4
Bihar	20000	1:1
Maharashtra	50000	7:4
Gujrat	40000	1:1
MP	30000	1:2

Q11 Total Qualified Female from Delhi and MP together is what % of Total Male Qualified from Gujarat and Bihar Together?

(A) 94.730% (B) 77.825%
(C) 64.128% (D) 88.524%
(E) None of these

Q12 There are 31000 males in Maharashtra, then find out not qualified female from Maharashtra is what percentage of total population of Maharashtra?

(A) 60% (B) 80%
(C) 30% (D) 50%
(E) None of these

Q13 Average number of 12th Qualified females is how much more or less than the average number of 12th Qualified male from all the state together?

(A) 440 (B) 480
(C) 420 (D) 340
(E) None of these

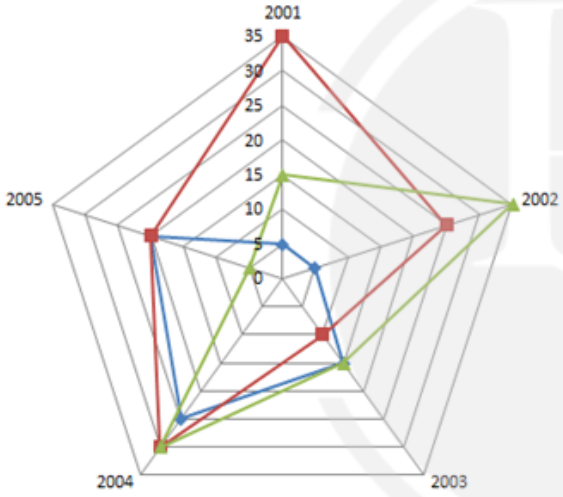
Q14 The average number of 12th Qualified males and females from MP and Bihar is What percentage more or less than the average number of Qualified males from all the states together?

(A) 2.36% less (B) 1.5% less
(C) 4.17% more (D) 5.22% more
(E) None of these

Q15 Find the total number of 12th Qualified people from all the states together?
(A) 23100 (B) 12900
(C) 12920 (D) 12950
(E) None of these

Directions (16-20) Read the following passage and answer the given questions.

The given radar graph shows the number of students (in thousands) who opted for three different streams during the given five years in the B.tech exam.



Notes:

- Red line shows Mechanical
- Green line shows Civil
- Blue line shows Electrical

Q16 What is the respective ratio between the number of students who opted for Mechanical in the years 2002 and 2004 together to the number of students who opted for Electrical in the year 2001 and 2005 together?
(A) 5 : 7 (B) 11 :7
(C) 11 : 5 (D) 7 : 9
(E) None of these

Q17 If the total number of students in the given exam in the year 2003 was 455030, the total number of students who opted for the given three specialization were approximately what percent of the total students?
(A) 15% (B) 9%
(C) 22% (D) 3%
(E) None of these

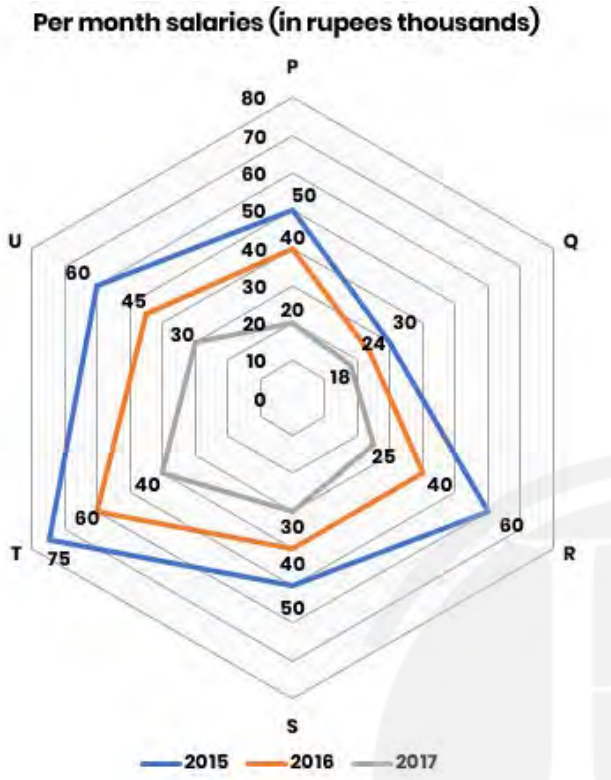
Q18 What is the total number of students who opted for Civil and who opted for Electrical in the years 2002, 2003 and 2005 together?
(A) 95000 (B) 85000
(C) 75000 (D) 55000
(E) None of these

Q19 Out of the total number of students who opted for the given three streams, in the year 2005, 38% were girls. How many boys opted for the given three streams in the same year?
(A) 28900 (B) 33000
(C) 25900 (D) 24400
(E) None of these

Q20 The total number of students who opted for civil in the years 2001 and 2004 together are approximately what percent of the total number of students who opted for all three posts in the same years?
(A) 39% (B) 42%
(C) 28% (D) 32%
(E) None of these

Directions (21-25) Read the following passage and answer the given questions.

Following graph shows per month salaries of each of the 6 persons at the start of years 2015, 2016 and 2017. (in thousand rupees).



Note: For any year, assume per month salary of each person remains same as that at the start of year unless otherwise mentioned.

Q21 If per month salary of Ram at the start of year 2016 was Rs. 1500 less than the average of per month salaries of all 6 persons at the start of year 2016 and after every 6 months his per month salary increases by 20%, then what will be the per month salary of Ram at the start of year 2018?

(A) Rs.82944
(B) Rs.80944
(C) Rs.84044
(D) Rs.75944
(E) Other than above

Q22 Average income of P in all 3 given years is what percent less/more than the average income of R in all 3 given years?

(A) 15% (B) 12%
(C) 18% (D) 24%
(E) 20%

Q23 If per month expenditure of T in year 2016 was 25% more than his per month expenditure in year 2015 and his per month expenditure in year 2017 was 60% more than his per month expenditure in year 2016, then what was the total expenditure of T in year 2015 if his total savings in 3 years together was Rs.1080 thousand?

(A) Rs 1.5 lacs (B) Rs 2.4 lacs
(C) Rs 3.6 lacs (D) Rs 4 lacs
(E) Rs 4.8 lacs

Q24 What is the ratio of average income of S in all 3 given years to the average income of U in all 3 given years?

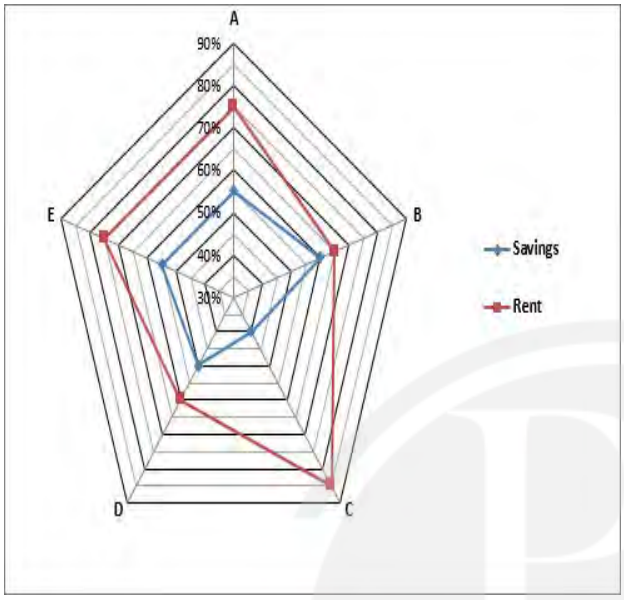
(A) 7: 9 (B) 7: 8
(C) 8: 9 (D) 10: 11
(E) 6: 7

Q25 If per month incomes of P, Q and U in starting of year 2016 were increased by 37.5%, 75% and 40% respectively, then total per month income of all 6 persons together in year 2017 will be what percent of average per month income of all 6 persons in year 2016?

(A) 340% (B) 326%
(C) 360% (D) 420%
(E) 384%

Q26 **Directions: Answer the questions based on the information given below.**

The radar graph given below shows the percentage of savings of five persons (A, B, C, D and E) out of their respective monthly incomes. It also shows the percentage expenditure on rent by each of them out of their monthly expenditure.



The table given below shows the rent paid by A, B, C, D and E.

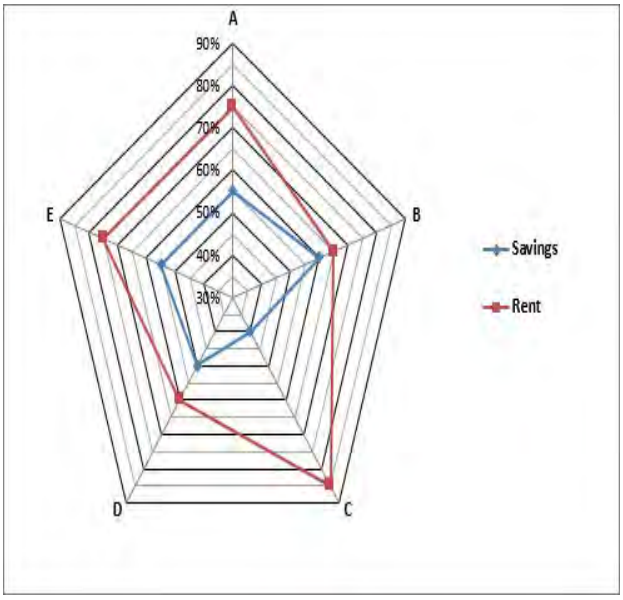
Persons	A	B	C	D	E
Rent (in Rs.)	4050	4160	5100	5400	8100

Q. What is the average monthly income of A, D and E together?

(A) Rs. 15000 (B) Rs. 18000
(C) Rs. 13000 (D) Rs. 16000
(E) None of these

Q27 Directions: Answer the questions based on the information given below.

The radar graph given below shows the percentage of savings of five persons (A, B, C, D and E) out of their respective monthly incomes. It also shows the percentage expenditure on rent by each of them out of their monthly expenditure.



The table given below shows the rent paid by A, B, C, D and E.

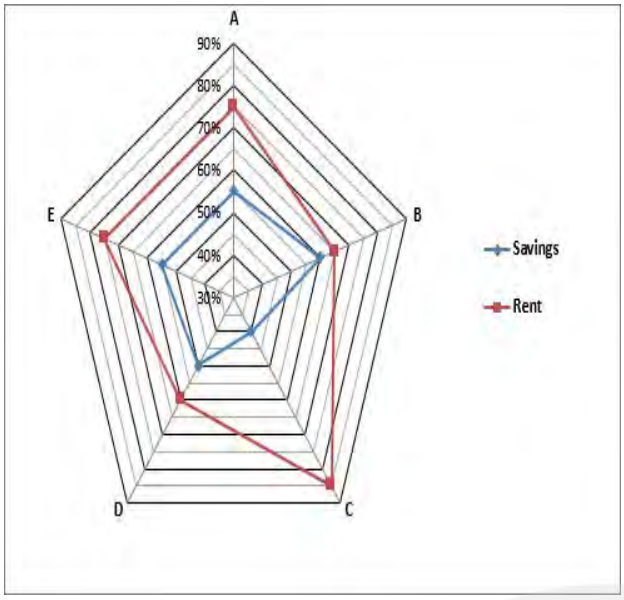
Persons	A	B	C	D	E
Rent (in Rs.)	4050	4160	5100	5400	8100

Q. What is the difference between the savings of C and D together, and savings of E?

(A) Rs. 400 (B) Rs. 800
(C) Rs. 200 (D) Rs. 600
(E) None of these

Q28 Directions: Answer the questions based on the information given below.

The radar graph given below shows the percentage of savings of five persons (A, B, C, D and E) out of their respective monthly incomes. It also shows the percentage expenditure on rent by each of them out of their monthly expenditure.



The table given below shows the rent paid by A, B, C, D and E.

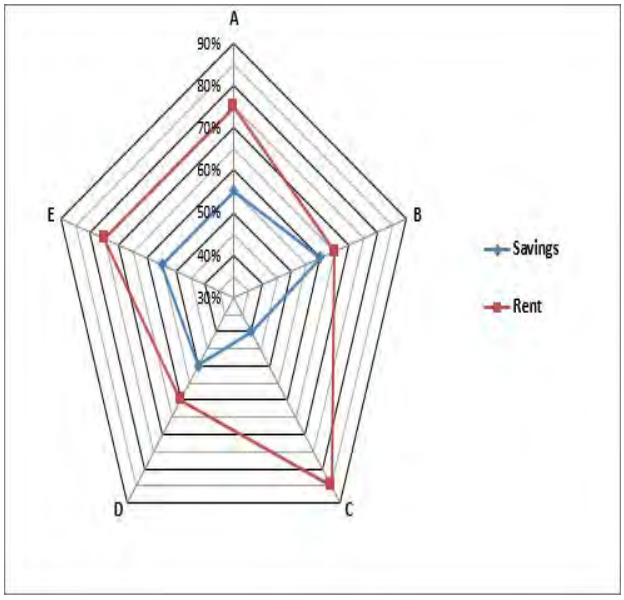
Persons	A	B	C	D	E
Rent (in Rs.)	4050	4160	5100	5400	8100

Q. If monthly incomes and savings of B is increased by 6% and decreased by 35%, respectively, then find the percentage increase/decrease in his monthly expense.

(A) 60%
(B) 75%
(C) 67.5%
(D) 50%
(E) 42.5%

Q29 Directions: Answer the questions based on the information given below.

The radar graph given below shows the percentage of savings of five persons (A, B, C, D and E) out of their respective monthly incomes. It also shows the percentage expenditure on rent by each of them out of their monthly expenditure.



The table given below shows the rent paid by A, B, C, D and E.

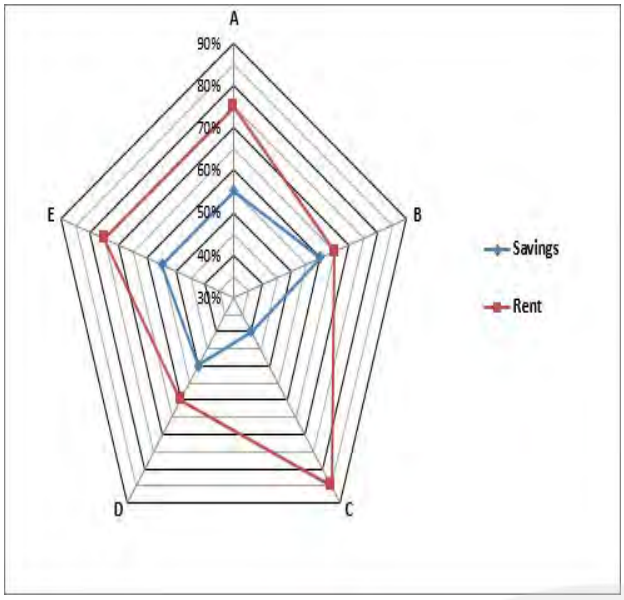
Persons	A	B	C	D	E
Rent (in Rs.)	4050	4160	5100	5400	8100

Q. What is the ratio of monthly income of D and E together to that of C and D together?

(A) 5: 4
(B) 6: 5
(C) 7: 6
(D) 5: 2
(E) None of these

Q30 Directions: Answer the questions based on the information given below.

The radar graph given below shows the percentage of savings of five persons (A, B, C, D and E) out of their respective monthly incomes. It also shows the percentage expenditure on rent by each of them out of their monthly expenditure.



The table given below shows the rent paid by A, B, C, D and E.

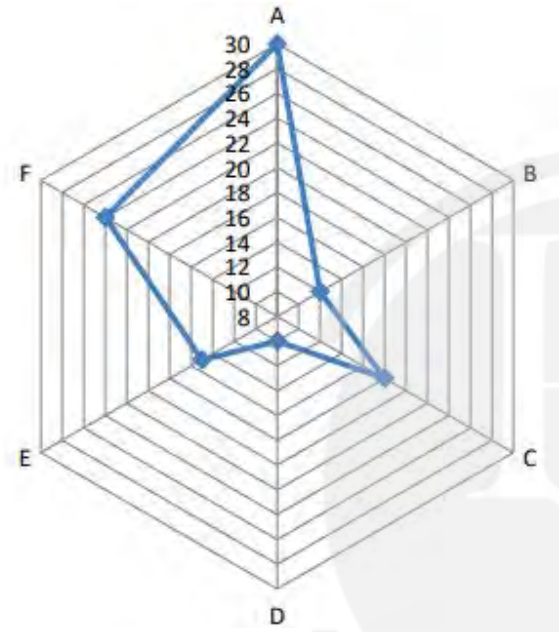
Persons	A	B	C	D	E
Rent (in Rs.)	4050	4160	5100	5400	8100

Q. Monthly savings of A and C together is what percentage of total monthly savings of all five together?

(A) 25%
(B) 30%
(C) 18%
(D) 32%
(E) None of these

Level-3

Directions (1-4) Read the following passage and answer the given questions.
Study the following data carefully and answer the questions:
The given radar graph shows the number of weeks taken by the workers A, B, C, D, E and F to construct a flyover.



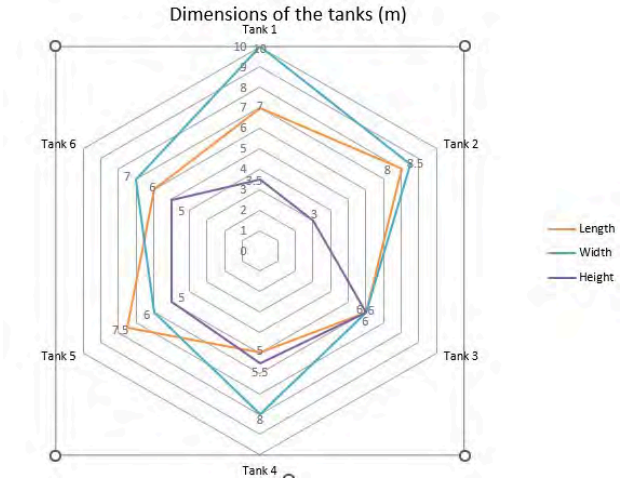
Q1 A started the work and left after P weeks and then F work for Q weeks and then left the work. After F left, D complete the remaining work in 3 weeks and ratio of the value of P to Q is 1:2, find the value of Q?
(A) 8 weeks (B) 3 weeks
(C) 16 weeks (D) 12 weeks
(E) None of these

Q2 A, B and C together can starts the work. If C works with 75% of his efficiency and A worked 25% more efficiently. All together gets the total wages Rs.60000. Find the individual wage of A?
(A) 20000 (B) 18000
(C) 15000 (D) 12000
(E) None of these

Q3 What is the ratio of average of A, D and F efficiency and average of B,C and E's efficiency together?
(A) $\frac{63}{74}$ (B) $\frac{62}{73}$
(C) $\frac{54}{23}$ (D) $\frac{18}{97}$
(E) None of these

Q4 E worked for P weeks and then left the work, A and C together can complete the remaining work in (P + 2.5) weeks. If E complete 33(1/3)% of the work in P weeks find the value of x?
(A) 12 weeks (B) 5 weeks
(C) 15 weeks (D) 7 weeks
(E) None of these

Directions (5-8) Read the following passage and answer the given questions.
Direction : Read the data Carefully And Answer the following Questions.
A housing society has 6 tanks which are cuboidal in shape. The graph below gives the dimensions of the tanks (All values are in multiples of 0.5)



There are 4 pipes that are used to fill these tanks.

Pipe A can fill tank 1 in 3500 minutes. Pipes A and B together can fill tank 2 in 1700 minutes.

Pipes B and C together can fill tank 4 in 2000 minutes.

Pipes C and D together can fill tank 3 in 2000 minutes.

1 m^3 = 1000 liters

Q5 What is the ratio of efficiency of pipes C and D?

(A) 5:3
(B) 5:4
(C) 3:4
(D) 5:6
(E) None of these

Q6 In how much time can pipe B fill tank 5?

(A) 4800 minutes (B) 5400 minutes
(C) 4500 minutes (D) 4000 minutes
(E) None of these

Q7 How long will pipes B and D take to fill tank 1 when operating together?

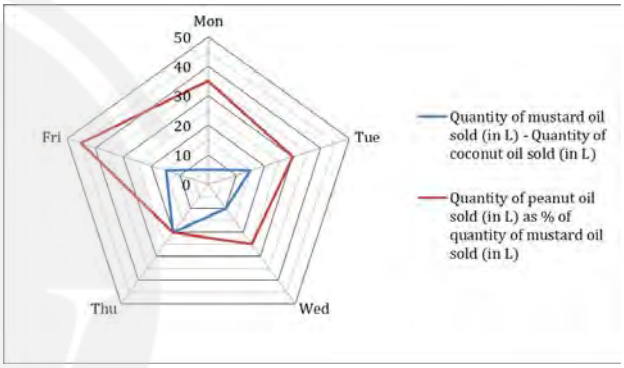
(A) 2400 minutes (B) 2500 minutes
(C) 3200 minutes (D) 2100 minutes
(E) None of these

Q8 Tank 6 was empty. Pipe A filled it for 1000 minutes, then pipe C filled it for 1500 minutes and then pipe B filled the remaining portion. In how much time was the tank full?

(A) 3500 minutes (B) 3600 minutes
(C) 3200 minutes (D) 4500 minutes
(E) None of these

Q9 Direction: Study the data carefully and answer the following questions.

Data given below is related to the quantities (in liters) of mustard oil, coconut oil and peanut oil sold by a shopkeeper on 5 different days Mon, Tue, Wed, Thu and Fri.



Note:

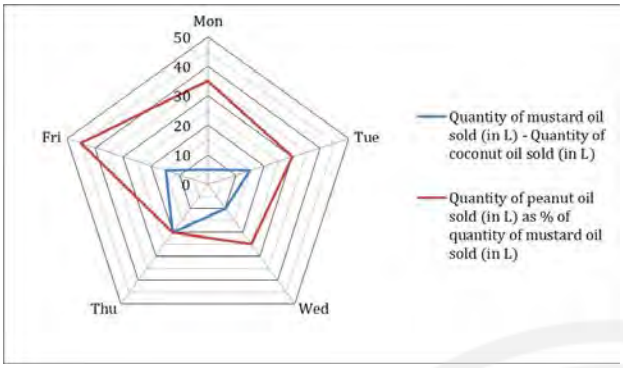
1. Cost of coconut oil is ₹150 per L, cost of peanut oil is ₹200 per L and total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that received on Thu.
2. Ratio of quantity of mustard oil sold on Wed to that sold on Thu is 3: 4.

If quantity of coconut oil sold on Tue is 25% more than that sold on Thu, then find the ratio of quantity of peanut oil sold on Tue to that sold on Thu?

(A) 25: 16 (B) 5: 4
(C) 10: 7 (D) 50: 33
(E) None of these

Q10 Direction: Study the data carefully and answer the following questions.

Data given below is related to the quantities (in liters) of mustard oil, coconut oil and peanut oil sold by a shopkeeper on 5 different days Mon, Tue, Wed, Thu and Fri.



Note:

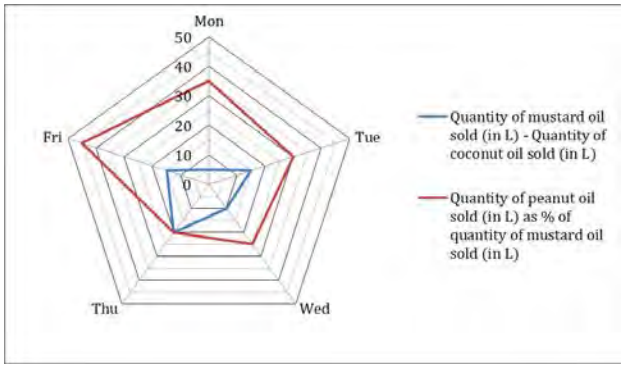
1. Cost of coconut oil is ₹150 per L, cost of peanut oil is ₹200 per L and total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that received on Thu.
2. Ratio of quantity of mustard oil sold on Wed to that sold on Thu is 3: 4.

If quantity of peanut oil sold on Wed is half of that sold on Fri and quantity of mustard oil sold on Tue is 10 L more than that sold on Fri, then find the average quantity of mustard oil sold on Tue, Wed and Fri?

(A) 50 L
(B) 44 L
(C) 54 L
(D) 42 L
(E) None of the above

Q11 Direction: Study the data carefully and answer the following questions.

Data given below is related to the quantities (in liters) of mustard oil, coconut oil and peanut oil sold by a shopkeeper on 5 different days Mon, Tue, Wed, Thu and Fri.



Note:

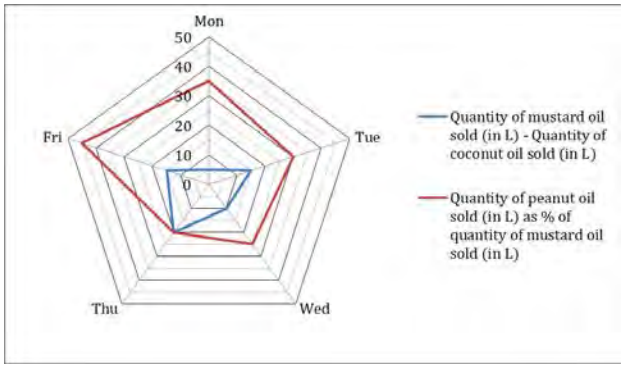
1. Cost of coconut oil is ₹150 per L, cost of peanut oil is ₹200 per L and total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that received on Thu.
2. Ratio of quantity of mustard oil sold on Wed to that sold on Thu is 3: 4.

If total quantity of mustard oil, coconut oil and peanut oil together sold on Mon is 15.4 L less than that sold on Thu, then find the average quantity of coconut oil and peanut oil sold on Mon?

(A) 15.1 L
(B) 21.1 L
(C) 19.1 L
(D) 17.1 L
(E) None of these

Q12 Direction: Study the data carefully and answer the following questions.

Data given below is related to the quantities (in liters) of mustard oil, coconut oil and peanut oil sold by a shopkeeper on 5 different days Mon, Tue, Wed, Thu and Fri.



Note:

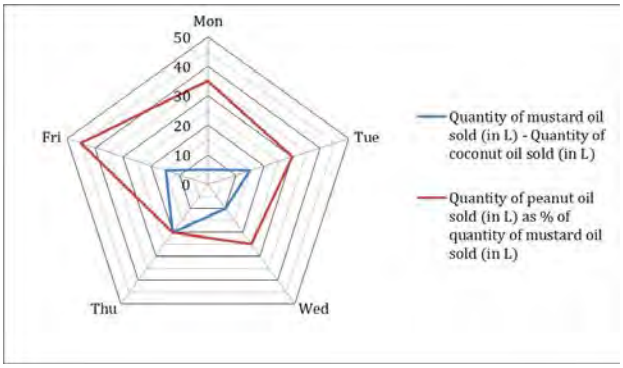
1. Cost of coconut oil is ₹150 per L, cost of peanut oil is ₹200 per L and total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that received on Thu.
2. Ratio of quantity of mustard oil sold on Wed to that sold on Thu is 3: 4.

If quantity of mustard oil sold on Wed is 90% of that sold on Tue and cost of mustard oil is ₹180 per L, then find the total amount received by the shopkeeper by selling all the three types of oil on Tue?

(A) ₹14350 (B) ₹13350
(C) ₹15350 (D) ₹11350
(E) None of these

Q13 Direction: Study the data carefully and answer the following questions.

Data given below is related to the quantities (in liters) of mustard oil, coconut oil and peanut oil sold by a shopkeeper on 5 different days Mon, Tue, Wed, Thu and Fri.



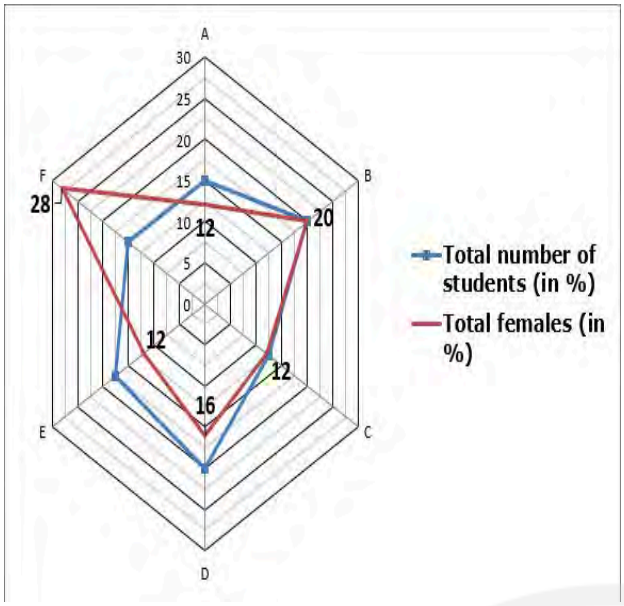
Note:

1. Cost of coconut oil is ₹150 per L, cost of peanut oil is ₹200 per L and total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that received on Thu.
2. Ratio of quantity of mustard oil sold on Wed to that sold on Thu is 3: 4.

If quantity of mustard oil sold on Mon, Tue and Fri is respectively 75%, 112.5% and 66.67% of that sold on Thu, then find the average quantity of coconut oil sold on each of the given 5 days?

(A) 31.5 L (B) 24.8 L
(C) 22.3 L (D) 28.2 L
(E) None of these

Q14 Direction: Read the following information carefully and answer the questions based on it. In the graph given below, the percentage of students in six different sections A, B, C, D, E and F (including both males and females) out of total students and percentage of females out of total females is mentioned. Read the information and answer the questions.



NOTES: Values in the radar graph are in percentage terms. 1/3rd of the total students in sections E and F is 65. Ratio of males and females in section F is 2:7.

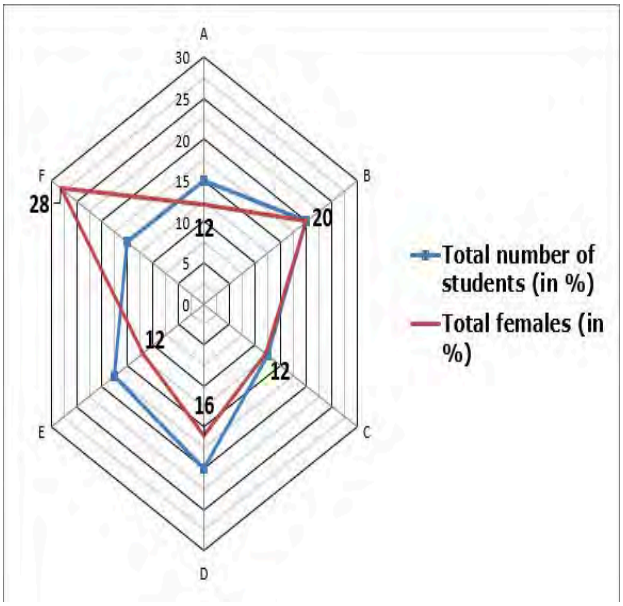
Q. Females from section A and males from section F buy movie tickets that cost Rs. 10800. Find the cost of each ticket.

(A) Rs. 260 (B) Rs. 170

(C) Rs. 320 (D) Rs. 216

(E) None of these

Q15 Direction: Read the following information carefully and answer the questions based on it. In the graph given below, the percentage of students in six different sections A, B, C, D, E and F (including both males and females) out of total students and percentage of females out of total females is mentioned. Read the information and answer the questions.



NOTES: Values in the radar graph are in percentage terms. 1/3rd of the total students in sections E and F is 65. Ratio of males and females in section F is 2:7.

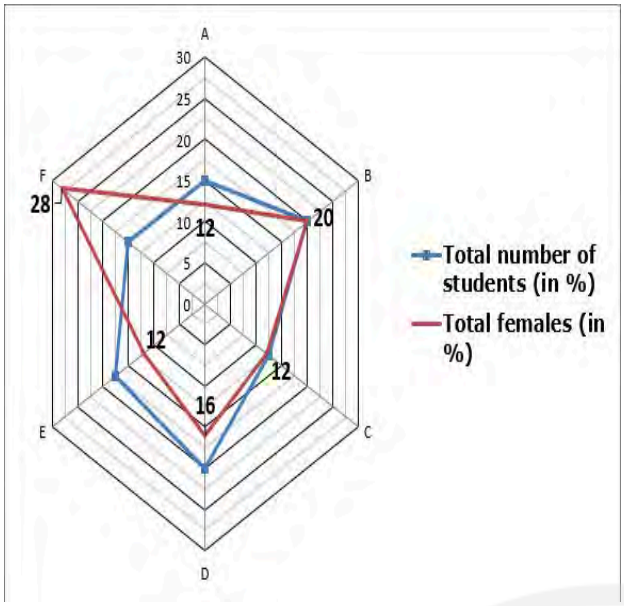
Q. Females in section B are how much percent less than total students in that section?

(A) 48% (B) 55%

(C) 53% (D) 57%

(E) None of these

Q16 Direction: Read the following information carefully and answer the questions based on it. In the graph given below, the percentage of students in six different sections A, B, C, D, E and F (including both males and females) out of total students and percentage of females out of total females is mentioned. Read the information and answer the questions.



NOTES: Values in the radar graph are in percentage terms. 1/3rd of the total students in sections E and F is 65. Ratio of males and females in section F is 2:7.

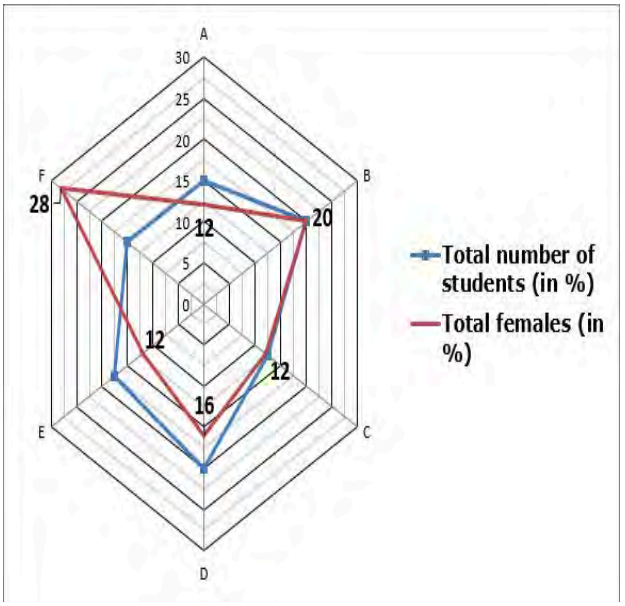
Q. Find the ratio of average count of females in sections A, B, C and D with respect to average males in sections A, C and E.

(A) 5:8 (B) 5:7

(C) 3:8 (D) 7:8

(E) None of these

Q17 Direction: Read the following information carefully and answer the questions based on it. In the graph given below, the percentage of students in six different sections A, B, C, D, E and F (including both males and females) out of total students and percentage of females out of total females is mentioned. Read the information and answer the questions.



NOTES: Values in the radar graph are in percentage terms. 1/3rd of the total students in sections E and F is 65. Ratio of males and females in section F is 2:7.

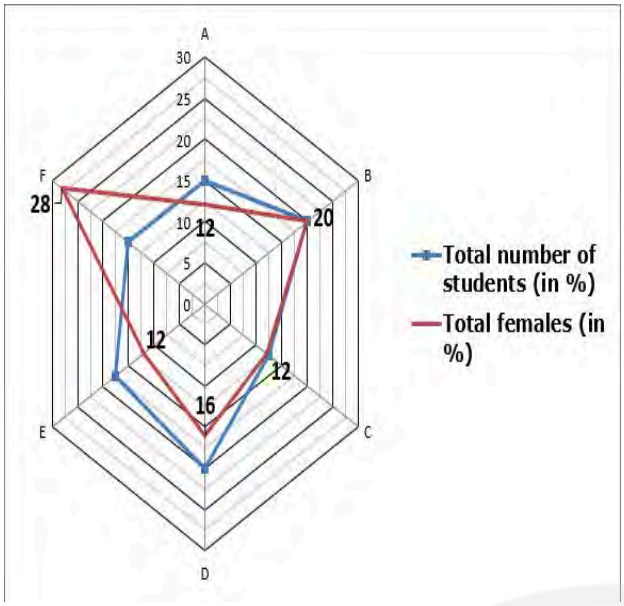
Q. Find that females in sections D and E together are what percent of the males in section E?

(A) 66.66% (B) 93.33%

(C) 76.66% (D) 33.33%

(E) None of these

Q18 Direction: Read the following information carefully and answer the questions based on it. In the graph given below, the percentage of students in six different sections A, B, C, D, E and F (including both males and females) out of total students and percentage of females out of total females is mentioned. Read the information and answer the questions.



NOTES: Values in the radar graph are in percentage terms. 1/3rd of the total students in sections E and F is 65. Ratio of males and females in section F is 2:7.

Q. In section P females are 10% more than that of section B. Males in section P are 80% of the total students in section P. In section P, females: males =1:4.Find the sums of males in sections P and C together.

(A) 215 (B) 265

(C) 315 (D) 365

(E) None of these

Answer Key

Level-1

Q1	(B)
Q2	(A)
Q3	(E)
Q4	(C)
Q5	(D)
Q6	(B)
Q7	(E)
Q8	(C)
Q9	(A)
Q10	(E)
Q11	(A)
Q12	(E)
Q13	(D)
Q14	(C)
Q15	(E)
Q16	(C)
Q17	(D)
Q18	(B)
Q19	(A)
Q20	(D)

Level-2

Q1	(A)	Q16	(C)
Q2	(D)	Q17	(B)
Q3	(B)	Q18	(A)
Q4	(A)	Q19	(E)
Q5	(D)	Q20	(D)
Q6	(D)	Q21	(A)
Q7	(B)	Q22	(B)
Q8	(A)	Q23	(B)
Q9	(D)	Q24	(C)
Q10	(B)	Q25	(B)
Q11	(A)	Q26	(B)
Q12	(C)	Q27	(C)
Q13	(C)	Q28	(C)
Q14	(A)	Q29	(E)
Q15	(A)	Q30	(A)

Level-3

Q1	(D)	Q10	(D)
Q2	(C)	Q11	(C)
Q3	(A)	Q12	(B)
Q4	(B)	Q13	(D)
Q5	(B)	Q14	(D)
Q6	(C)	Q15	(E)
Q7	(B)	Q16	(A)
Q8	(A)	Q17	(B)
Q9	(A)	Q18	(B)

Hints & Solutions

Level-1

Q1. Text Solution:

From the given graph,

Year	A	B
2008	40	70
2009	60	80
2010	50	30
2011	80	40
2012	40	60
2013	70	80

Combined sales ofboth the companies in 2010 = 50 + 30 = 80 crores.

Q2. Text Solution:

From the given graph,

Year	A	B
2008	40	70
2009	60	80
2010	50	30
2011	80	40
2012	40	60
2013	70	80

Required answer = $\frac{(80-40)}{40} \times 100 = 100\%$

Q3. Text Solution:

From the given graph,

Year	A	B
2008	40	70
2009	60	80
2010	50	30
2011	80	40
2012	40	60
2013	70	80

Total sales of company B = 70+80 + 30+ 40+60+80= 360 crores.

Required answer = $\frac{360}{6} = 60$ crores

Q4. Text Solution:

From the given graph,

Year	A	B

2008	40	70
2009	60	80
2010	50	30
2011	80	40
2012	40	60
2013	70	80

Total sales of company A = 40+60+50+80 + 40 + 70 = 340 crores.

Total sales of company B = 70+80 + 30+ 40+ 60 + 80 = 360 crores.

Required answer = 360-340 = 20 crores.

Q5. Text Solution:

From the given graph,

Year	A	B
2008	40	70
2009	60	80
2010	50	30
2011	80	40
2012	40	60
2013	70	80

Total sales of company A and B in 2012 = 40 + 60 = 100 crores.

$\frac{25}{100} \times$ (Total market size) = 100 crores.

Total market size = 400 crores.

Q6. Text Solution:

Average sales of grade 1= $\frac{(20+40+50+60)}{4} = 42.5$ tonnes

Average sales of grade 2= $\frac{(40+60+20+110)}{4} = 57.5$tonnes

Difference= 57.5-42.5= 15 tonnes.

Q7. Text Solution:

Total income of companies A= $(75000 \times 20) + (60000 \times 40) = 3900000$

Total income of companies C= $(75000 \times 50) + (60000 \times 20) = 4950000$

Difference= Rs.1050000= Rs. 1.05 million.

Q8. Text Solution:

From the given graph,

Company	Grade 1(Tonnes)	Grade 2(Tonnes)
A	20	40
B	40	60
C	50	20
D	60	110

3 companies= A, B and D

Q9. Text Solution:

Net income of company A= $(75000 \times 20) + (60000 \times 40) = 3900000$

Grade 1 constitutes

$\frac{150000}{3900000} \times 100 = 38.46\%$

Q10. Text Solution:

Total production by company D= 60+110= 170 tonnes

Total production by company B= 40+60= 100 tonnes

Total production by company D is 170 % that of company B = $\frac{170}{100} \times 100 = 170\%$

Q11 Text Solution:

Celebrity A:

Number of subscribers on YouTube = 80 lakh

So, number of followers on instagram = 45% of 80 = 36 lakh

Celebrity B:

Number of subscribers on YouTube = 50 lakh

So, number of followers on instagram = 60% of 50 = 30 lakh

Celebrity C:

Number of subscribers on YouTube = 75 lakh

So, number of followers on instagram = 40% of 75 = 30 lakh

Celebrity D:

Number of subscribers on YouTube = 40 lakh

So, number of followers on instagram = 55% of 40 = 22 lakh

Celebrity E:

Number of subscribers on YouTube = 60 lakh

So, number of followers on instagram = 70% of 60 = 42 lakh

Total number of followers of B on Instagram = 30 lakh

So, number of female followers of B on instagram = $33\frac{1}{3}\%\ of\ 30\ =\ 10\ lakh$

Total number of followers of E on Instagram = 42 lakh

So, number of female followers of E on Instagram = $(100\ -\ 71\frac{3}{7})\%\ of\ 42\ =\ 12\ lakh$

Required ratio = 10: 12 = 5: 6

Q12 Text Solution:

Celebrity A:

Number of subscribers on YouTube = 80 lakh

So, number of followers on instagram = 45% of 80 = 36 lakh

Celebrity B:

Number of subscribers on YouTube = 50 lakh

So, number of followers on instagram = 60% of 50 = 30 lakh

Celebrity C:

Number of subscribers on YouTube = 75 lakh

So, number of followers on instagram = 40% of 75 = 30 lakh

Celebrity D:

Number of subscribers on YouTube = 40 lakh

So, number of followers on instagram = 55% of 40 = 22 lakh

Celebrity E:

Number of subscribers on YouTube = 60 lakh

So, number of followers on instagram = 70% of 60 = 42 lakh

Total number of subscribers of B, C and D together on YouTube = 50 + 75 + 40 = 165 lakh

Total number of followers of B, C and D together on Instagram = 30 + 30 + 22 = 82 lakh

Required difference = 165 - 82 = 83 lakh

Q13 Text Solution:

Celebrity A:

Number of subscribers on YouTube = 80 lakh

So, number of followers on instagram = 45% of 80 = 36 lakh

Celebrity B:

Number of subscribers on YouTube = 50 lakh

So, number of followers on instagram = 60% of 50 = 30 lakh

Celebrity C:

Number of subscribers on YouTube = 75 lakh

So, number of followers on instagram = 40% of 75 = 30 lakh

Celebrity D:

Number of subscribers on YouTube = 40 lakh

So, number of followers on instagram = 55% of 40 = 22 lakh

Celebrity E:

Number of subscribers on YouTube = 60 lakh

So, number of followers on instagram = 70% of 60 = 42 lakh

Number of A's subscribers on YouTube = 80 lakh

So, number of F's subscribers on YouTube = 80% of 80 = 64 lakh

Number of A's followers on Instagram = 36 lakh

So, number of F's followers on Instagram = $133\frac{1}{3}\%\ of\ 36\ =\ 48\ lakh$

Required ratio = 64: 48 = 4: 3

Q14 Text Solution:

Celebrity A:

Number of subscribers on YouTube = 80 lakh

So, number of followers on instagram = 45% of 80 = 36 lakh

Celebrity B:

Number of subscribers on YouTube = 50 lakh

So, number of followers on instagram = 60% of 50 = 30 lakh

Celebrity C:

Number of subscribers on YouTube = 75 lakh

So, number of followers on instagram = 40% of 75 = 30 lakh

Celebrity D:

Number of subscribers on YouTube = 40 lakh

So, number of followers on instagram = 55% of 40 = 22 lakh

Celebrity E:

Number of subscribers on YouTube = 60 lakh

So, number of followers on instagram = 70% of 60 = 42 lakh

Total number of followers on Instagram of each celebrity = 36 + 30 + 30 + 22 + 42 = 160 lakh

Number of D's followers on Instagram = 22 lakh

Required degree distribution = $360\ \times\ \frac{22}{160}\ =49.5^{\circ}$

Q15 Text Solution:

Celebrity A:

Number of subscribers on YouTube = 80 lakh

So, number of followers on instagram = 45% of 80 = 36 lakh

Celebrity B:

Number of subscribers on YouTube = 50 lakh

So, number of followers on instagram = 60% of 50 = 30 lakh

Celebrity C:

Number of subscribers on YouTube = 75 lakh

So, number of followers on instagram = 40% of 75 = 30 lakh

Celebrity D:

Number of subscribers on YouTube = 40 lakh

So, number of followers on instagram = 55% of 40 = 22 lakh

Celebrity E:

Number of subscribers on YouTube = 60 lakh

So, number of followers on instagram = 70% of 60 = 42 lakh

Total number of subscribers of A and E together on YouTube = 80 + 60 = 140 lakh

Total number of followers of A and E together on Instagram = 36 + 42 = 78 lakh

Required average = $\frac{140+78}{2}\ =109\ lakh$

Q16. Text Solution:

From the given graph,

Year	France	China	German	Japan	Total
2008	20	40	5	15	80
2009	30	35	10	40	115
2010	25	20	5	15	65
2011	30	35	25	20	110
2012	10	40	5	25	80
2013	15	30	25	35	105
2014	20	5	30	40	95

2015	20	35	20	40	115
Total	170	240	125	230	765

Average number of companies registered will be maximum when total number of companies registered will be maximum. Total number of companies registered in 2008 = 5 + 20+ 15 + 40 = 80

Total number of companies registered in 2009 = 10 + 30 + 40 + 35 = 115

Total number of companies registered in 2010 = 5 + 25 + 15 + 20 = 65

Total number of companies registered in 2011 = 25 + 30 + 20 + 35 = 110

Average number of companies registered will be maximum in 2009.

Q17. Text Solution:

From the given graph,

Year	France	China	German	Japan	Total
2008	20	40	5	15	80
2009	30	35	10	40	115
2010	25	20	5	15	65
2011	30	35	25	20	110
2012	10	40	5	25	80
2013	15	30	25	35	105
2014	20	5	30	40	95
2015	20	35	20	40	115
Total	170	240	125	230	765

Number of companies registered in 2015 = 20 + 20 + 40 + 35 = 115

Number of companies registered in 2008 = 5 + 20 + 15 + 40 = 80 %

$\frac{(115-80)}{80} \times 100 = 43.75\%$ more.

Q18. Text Solution:

From the given graph,

Year	France	China	German	Japan	Total
2008	20	40	5	15	80
2009	30	35	10	40	115
2010	25	20	5	15	65
2011	30	35	25	20	110
2012	10	40	5	25	80
2013	15	30	25	35	105
2014	20	5	30	40	95
2015	20	35	20	40	115
Total	170	240	125	230	765

Number of companies registered in Japan during 2008 to 2015 = 15 +40 + 15+ 20+ 25 +35 + 40 + 40 = 230

Number of companies registered in China during 2008 to 2015 = 40+ 35+ 20+ 35 +40 + 30 + 5 + 35 = 240

Required ratio = 23:24

Q19. Text Solution:

From the given graph,

Year	France	China	German	Japan	Total
2008	20	40	5	15	80
2009	30	35	10	40	115
2010	25	20	5	15	65
2011	30	35	25	20	110
2012	10	40	5	25	80
2013	15	30	25	35	105
2014	20	5	30	40	95
2015	20	35	20	40	115
Total	170	240	125	230	765

Average number of companies registered will be maximum when total number of companies registered will be maximum.

Total number of companies registered is maximum in China i.e., 240,000.

Q20. Text Solution:

From the given graph,

Year	France	China	German	Japan	Total
2008	20	40	5	15	80
2009	30	35	10	40	115
2010	25	20	5	15	65
2011	30	35	25	20	110
2012	10	40	5	25	80
2013	15	30	25	35	105
2014	20	5	30	40	95
2015	20	35	20	40	115
Total	170	240	125	230	765

Total number of companies registered in France

= 170

Total number of companies registered in China

= 240

Required percent = $\frac{240-170}{240} \times 100 = 29.16\%$ less

Level-2

Q1. Text Solution:

Let selling price of A and that C be Rs 40x & Rs 27x respectively.

So, marked price of C = $27x \times \frac{100}{90} = 30x$

And, cost price of A = $40x \times \frac{100}{80} \times \frac{100}{125} = 40x$

Required% = $\frac{30x}{40x} \times 100 = 75\%$

Q2. Text Solution:

Let marked price of B be Rs.100x.

So, selling price of D = $\frac{140}{100} \times 100x = 140x$

Now, selling price of B = $100x \times \frac{85}{100} = 85x$

And, cost price of D = $140x \times \frac{100}{75} \times \frac{100}{140} = \frac{400x}{3}$

ATQ,

$\frac{400x}{3}$ - $85x = 290x = 6$

Selling price of B = 85 x 6 = Rs 510

Selling price of D = 140 x 6 = Rs 840

Cost price of B = $100 \times 6 \times \frac{100}{120} = 500$

Cost price of D = $\frac{400}{3} \times 6 = 800$

Required Profit = (510-500)+(840-800) = Rs. 50

Q3. Text Solution:

Let cost price of A and that of E be Rs. 100x & Rs.100y respectively

Selling price of A = $100x \times \frac{125}{100} \times \frac{80}{100} = 100x$

Selling price of E = $100y \times \frac{160}{100} \times \frac{70}{100} = 112y$

ATQ, (100x - 100x) + (112y - 100y) = 36

y = 3

Marked price of E = $100 \times \frac{160}{100} \times 3 = 480$

Required amount = 480- 112 × 3 = Rs 144

Q4. Text Solution:

Let cost price of C & selling price of E be Rs.50x & Rs.70x respectively.

So, selling price of C = $50x \times \frac{150}{100} \times \frac{90}{100} = 67.5x$

ATQ,

67.5x + 70x = 2200

x = 16

Marked price of C = $50 \times \frac{150}{100} \times 16 = 1200$

Marked price of E = $70 \times \frac{100}{70} \times 16 = 1600$

Required difference = 1600-1200 = Rs.400

Q5. Text Solution:

Let cost price of A & that of B be Rs.100x & Rs.100y respectively.

So, selling price of A = $100x \times \frac{125}{100} \times \frac{80}{100} = 100x$

And, selling price of B = $100y \times \frac{120}{100} \times \frac{85}{100} = 102y$

Now, marked price of A = $100x \times \frac{125}{100} = 125x$

And, marked price of B = $100y \times \frac{120}{100} = 120y$

ATQ,

100x + 102y = 2330

50x + 51y = 1165 .....(1)

And, 120y - 125x = 800

24y - 25x = 160 .....(2)

On solving (i) & (ii)

y = 15, x = 8

Required % = $\frac{100 \times 15}{100 \times 8} \times 100 = 187.5\%$

Q6 Text Solution:

Common Explanation:

Let, total distance travelled by all the five cars together be 'x' km.

So, distance travelled by car A \(= 0.24x\) km

Let, sum of speeds of all the five cars together be 'y' km/hr

So, speed of car A \(= 0.15y\) km/hr

Therefore, \(\frac{0.24x}{0.15y} = 24\)

\(= \frac{8x}{5y} = 24\)

\(= \frac{x}{5y} = 3\)

\(= x = 15y\)

According to question,

Distance travelled by car C = \(0.3x = 0.3 \times 15y = 4.5y\ km\)

Distance travelled by car D = \(0.2x = 0.2 \times 15y = 3y\ km\)

Speed of car C $= 0.2y$ km/hr
Speed of car D $= 0.3y$ km/hr
Required difference = $\frac{4.5y}{0.2y} - \frac{3y}{0.3y} = 12.5$ hours

Q7 Text Solution:

Common Explanation:

Let, total distance travelled by all the five cars together be 'x' km.
So, distance travelled by car A $= 0.24x$ km
Let, sum of speeds of all the five cars together be 'y' km/hr
So, speed of car A $= 0.15y$ km/hr
Therefore, $\frac{0.24x}{0.15y} = 24$
$= \frac{8x}{5y} = 24$
$= \frac{x}{5y} = 3$
$= x = 15y$
According to question,
Distance travelled by car B $= 0.1x = 0.1 \times 15y = 1.5y$ km
Distance travelled by car E $= 0.16x = 0.16 \times 15y = 2.4y$ km
Speed of car B $= 0.225y$ km/hr
Speed of car E $= 0.125y$ km/hr
Time taken by car B $= \frac{1.5y}{.225y} = \frac{20}{3}$ hours
Time taken by car E $= \frac{2.4y}{0.125y} = 19.2$ hours
Required ratio $= \frac{20}{3}:\frac{192}{10} = 200:576 = 25:72$

Q8 Text Solution:

Common Explanation:

Let, total distance travelled by all the five cars together be 'x' km.
So, distance travelled by car A $= 0.24x$ km
Let, sum of speeds of all the five cars together be 'y' km/hr
So, speed of car A $= 0.15y$ km/hr
Therefore, $\frac{0.24x}{0.15y} = 24$
$= \frac{8x}{5y} = 24$
$= \frac{x}{5y} = 3$
$= x = 15y$
According to question,
Distance travelled by car B $= 0.1x = 0.1 \times 15y = 1.5y$ km
So, $1.5y = 600$
$= y = \frac{600}{1.5} = 400$
Speed of car D $= 0.3y = 120$ km/hr
Speed of car E $= 0.125y = 50$ km/hr
Required difference $= 120 - 50 = 70$ km/hr

Q9 Text Solution:

Common Explanation:

Let, total distance travelled by all the five cars together be 'x' km.
So, distance travelled by car A $= 0.24x$ km
Let, sum of speeds of all the five cars together be 'y' km/hr
So, speed of car A $= 0.15y$ km/hr
Therefore, $\frac{0.24x}{0.15y} = 24$
$= \frac{8x}{5y} = 24$
$= \frac{x}{5y} = 3$
$= x = 15y$
According to question,
Speed of car B $= 0.225y$ km/hr
Speed of car C $= 0.2y$ km/hr
So, $0.225y - 0.2y = 10$
$y = \frac{10}{0.025} = 400$
Distance travelled by car A $= 0.24x = 3.6y$ km
Distance travelled by car C $= 0.3x = 4.5y$ km
Required difference $= 4.5y - 3.6y = 0.9y = 360$ km

Q10 Text Solution:

Common Explanation:

Let, total distance travelled by all the five cars together be 'x' km.

So, distance travelled by car A $= 0.24x$ km
Let, sum of speeds of all the five cars together be 'y' km/hr
So, speed of car A $= 0.15y$ km/hr
Therefore, $\frac{0.24x}{0.15y} = 24$
$= \frac{8x}{5y} = 24$
$= \frac{x}{5y} = 3$
$= x = 15y$
According to question,
Distance covered by car A $= 0.24x = 3.6y$ km
Speed of car A $= 0.15y$ km/hr
Time taken by car A $= \frac{3.6y}{0.15y} = 24$ hours
Distance covered by car B $= 0.10x = 1.5y$ km
Speed of car B $= 0.225y$ km/hr
Time taken by car B $= \frac{1.5y}{0.225y} = \frac{20}{3}$ hours
Distance covered by car C $= 0.30x = 4.5y$ km
Speed of car C = $0.2y$ km/hr
Time taken by car C $= \frac{4.5y}{0.2y} = 22.5$ hours
Distance covered by car D $= 0.20x = 3y$ km
Speed of car D $= 0.3y$ km/hr
Time taken by car D $= \frac{3y}{0.3y} = 10$ hours
Distance covered by car E $= 0.16x = 2.4y$ km
Speed of car E $= 0.125y$ km/hr
Time taken by car E $= \frac{2.4y}{0.125y} = 19.2$ hours
So, car B has taken least time

Q11. Text Solution:

Percentage of 12th qualified population.
Delhi = 14%, Bihar = 14%, Maharashtra = 22, Gujrat = 12%, MP = 10%

State	Total population	Total Qualification	Total Not Qualified	Qualified male	Qualified Female
Delhi	15000	3:4	12900	900	1200
Bihar	20000	1:1	17200	1400	1400
Maharashtra	50000	7:4	39000	7000	4000
Gujrat	40000	1:1	35200	2400	2400
MP	30000	1:2	27600	800	1600

Qualified Female from Delhi and MP = 2000 + 1600 = 3600
Qualified Male from Gujarat and Bihar = 2400 + 1400 = 3800
Required % = $\frac{3600}{3800} \times 100 = 94.730\%$

Q12. Text Solution:

In Maharashtra
The total male is = 31000 out of which Qualified males are 7000 and the remaining are not Qualified 24000.
Total Females = 19000 out of which Qualified females 4000 and Remaining are not Qualified = 15000
% = $\frac{15000}{50000} \times 100 = 30\%$

Q13. Text Solution:

Average number of females Qualified = 10600/5 = 2120
Average number of males Qualified = 12700/5 = 2540
Required difference = 2540 - 2120 = 420

Q14. Text Solution:

The average number of Qualified males and females from MP and Bihar = 5800/2= 2600

The average number of males Qualified = 12700/5 = 2540

Percentage more = $\frac{2600 - 2540}{2540} \times 100 = 2.36\%$ less

Q15. Text Solution:

Qualified male	Qualified Female
900	1200
1400	1400
7000	4000
2400	2400
800	1600

Required answer = 900 + 1400 + 7000 + 2400 + 800 + 1200 + 1400 + 4000 + 2400 + 1600 = 23100

Q16. Text Solution:

Required Ratio

= (25 + 30): (5 + 20)

= 55: 25

= 11: 5

Q17. Text Solution:

Required Percentage

$=\frac{15000 + 10000 + 15000)}{455030} \times 100 \approx 9\%$

= 9% Approximately

Q18. Text Solution:

Required total number of students

= (5 + 35 + 15 + 15 + 20 + 5) × 1000

= 95000

Q19. Text Solution:

In 2005

Total number of girls = (20 + 20 + 5) × 38/100 = 17100

= 17100

Total number of boys = 45000 – 17100 = 27900

Q20. Text Solution:

Required percentage

$= \frac{15000 + 30000}{5000 + 35000 + 15000 + 25000 + 30000 + 30000} \times 100 \approx 32\%$

Q21. Text Solution:

average of per month salaries of all 6 persons at the start of year 2016= $\frac{40 + 24 + 40 + 40 + 60 + 45}{6} = 41500$

per month salary of Ram at the start of year 2016 =41500-1500=40,000

mid 2016 =$\frac{40,000 \times 120}{100} = 48000$

starting 2017=$\frac{48000 \times 120}{100} = 57600$

mid 2017 =$\frac{57600 \times 120}{100} = 69120$

starting 2018=

$\frac{69120 \times 120}{100} = 82944$ Rs

Q22. Text Solution:

Total income of P in all 3 given years

= (20 × 12) + (40 × 12) + (50 × 12)

= 240 + 480 + 600

= Rs. 1320 thousand

Average income of P in all 3 given years = $\frac{1320}{3}$ = Rs.440 thousand

Total income of R in all 3 given years

= (25 × 12) + (40 × 12) + (60 × 12)

= 300 + 480 + 720

= Rs. 1500 thousand

Average income of R in all 3 given years = (1500/3) = Rs.500 thousand

Required percentage = $\frac{(500 - 440)}{500} \times 100\% = 12\%$

Q23. Text Solution:

Let total per month expenditure of T in year 2015 be E

Total per month expenditure of T in year 2016 = 1.25E

Total per month expenditure of T in year 2017
= 1.6 × 1.25E = 2E
Total savings of T in all 3 years
= (((40 − E) + (60 − 1.25E) + (75 − 2E)) × 12)(in rupees thousands)
= (175 − 4.25E) × 12
= 2100 − 51E (thousands)
2100 − 51E = 1080
51E = 1020
E = Rs.20 (thousands)
Total expenditure of T in year 2015 = 12 × 20
= Rs. 240000 = 2.4 Lacs

Q24. Text Solution:

Average income of S in all 3 given years
$\frac{30+40+50}{3} \times 12$
= Rs. $\frac{1440}{3}$ = Rs.480 (thousands)
Average income of U in all 3 given years
= Rs. $\frac{30 + 45 + 60}{3} \times 12$
= $\frac{1620}{3}$ = Rs.540 (thousands)
Required ratio = $\frac{480}{540} = \frac{8}{9} = 8:9$

Q25. Text Solution:

Per month income of P in year 2016 = 1.375 × 40
= Rs.55 (thousands)
Per month income of Q in year 2016 = 1.75 × 24 = Rs.42 (thousands)
Per month income of U in year 2016 = 1.4 × 45 = Rs. 63 (thousands)
Average per month income of all 6 persons in year 2016
$\frac{(55 + 42 + 40 + 40 + 60 + 63)}{6} = \text{Rs}.\frac{300}{6}$
(thousands) = Rs.50 (thousands)
Total per month income of all 6 persons in year 2017
= (20 + 18 + 25 + 30 + 40 + 30) = Rs. 163
(thousands) Required % = $\frac{163}{50}$ × 100% = 326%.

Q26 Text Solution:

Common Explanation:

Persons	Monthly Expense	Monthly Income	Monthly Savings
A	$\frac{4050}{0.75} = Rs.\ 5400$	$\frac{5400}{0.45} = Rs.\ 12000$	$12000 - 5400 = Rs.\ 6600$
B	$\frac{4160}{0.65} = Rs.\ 6400$	$\frac{6400}{0.40} = Rs.\ 16000$	$16000 - 6400 = Rs.\ 9600$
C	$\frac{5100}{0.85} = Rs.\ 6000$	$\frac{6000}{0.60} = Rs.\ 10000$	$10000 - 6000 = Rs.\ 4000$
D	$\frac{5400}{0.60} = Rs.\ 9000$	$\frac{9000}{0.50} = Rs.\ 18000$	$18000 - 9000 = Rs.\ 9000$
E	$\frac{8100}{0.75} = Rs.\ 10800$	$\frac{10800}{0.45} = Rs.\ 24000$	$24000 - 10800 = Rs.\ 13200$

According to question,
Required average $= \frac{12000 + 18000 + 24000}{3} = \frac{54000}{3} = Rs.\ 18000$

Q27 Text Solution:

Common Explanation:

Persons	Monthly Expense	Monthly Income	Monthly Savings
A	$\frac{4050}{0.75} = Rs.\ 5400$	$\frac{5400}{0.45} = Rs.\ 12000$	$12000 - 5400 = Rs.\ 6600$
B	$\frac{4160}{0.65} = Rs.\ 6400$	$\frac{6400}{0.40} = Rs.\ 16000$	$16000 - 6400 = Rs.\ 9600$
C	$\frac{5100}{0.85} = Rs.\ 6000$	$\frac{6000}{0.60} = Rs.\ 10000$	$10000 - 6000 = Rs.\ 4000$
D	$\frac{5400}{0.60} = Rs.\ 9000$	$\frac{9000}{0.50} = Rs.\ 18000$	$18000 - 9000 = Rs.\ 9000$
E	$\frac{8100}{0.75} = Rs.\ 10800$	$\frac{10800}{0.45} = Rs.\ 24000$	$24000 - 10800 = Rs.\ 13200$

According to question,
Required difference $= 13200 - \left(9000 + 4000 \right) = Rs.\ 200$

Q28 Text Solution:

Common Explanation:

Persons	Monthly Expense	Monthly Income	Monthly Savings
A	$\frac{4050}{0.75} = Rs.\ 5400$	$\frac{5400}{0.45} = Rs.\ 12000$	$12000 - 5400 = Rs.\ 6600$
B	$\frac{4160}{0.65} = Rs.\ 6400$	$\frac{6400}{0.40} = Rs.\ 16000$	$16000 - 6400 = Rs.\ 9600$
C	$\frac{5100}{0.85} = Rs.\ 6000$	$\frac{6000}{0.60} = Rs.\ 10000$	$10000 - 6000 = Rs.\ 4000$
D	$\frac{5400}{0.60} = Rs.\ 9000$	$\frac{9000}{0.50} = Rs.\ 18000$	$18000 - 9000 = Rs.\ 9000$
E	$\frac{8100}{0.75} = Rs.\ 10800$	$\frac{10800}{0.45} = Rs.\ 24000$	$24000 - 10800 = Rs.\ 13200$

According to question,

New monthly income of B $= 1.06 \times 16000 = Rs.\ 16960$

New monthly savings of B $= 0.65 \times 9600 = Rs.\ 6240$

New monthly expenses of B $= 16960 - 6240 = Rs.\ 10720$

Increase in monthly expense $= \frac{10720 - 6400}{6400} \times 100 = 67.5\%$

Q29 Text Solution:

Common Explanation:

Persons	Monthly Expense	Monthly Income	Monthly Savings
A	$\frac{4050}{0.75} = Rs.\ 5400$	$\frac{5400}{0.45} = Rs.\ 12000$	$12000 - 5400 = Rs.\ 6600$
B	$\frac{4160}{0.65} = Rs.\ 6400$	$\frac{6400}{0.40} = Rs.\ 16000$	$16000 - 6400 = Rs.\ 9600$
C	$\frac{5100}{0.85} = Rs.\ 6000$	$\frac{6000}{0.60} = Rs.\ 10000$	$10000 - 6000 = Rs.\ 4000$
D	$\frac{5400}{0.60} = Rs.\ 9000$	$\frac{9000}{0.50} = Rs.\ 18000$	$18000 - 9000 = Rs.\ 9000$
E	$\frac{8100}{0.75} = Rs.\ 10800$	$\frac{10800}{0.45} = Rs.\ 24000$	$24000 - 10800 = Rs.\ 13200$

According to question,

Required ratio $= \left(18000 + 24000 \right):\left(10000 + 18000 \right) = 3:2$

Q30 Text Solution:

Common Explanation:

Persons	Monthly Expense	Monthly Income	Monthly Savings
A	$\frac{4050}{0.75} = Rs.\ 5400$	$\frac{5400}{0.45} = Rs.\ 12000$	$12000 - 5400 = Rs.\ 6600$
B	$\frac{4160}{0.65} = Rs.\ 6400$	$\frac{6400}{0.40} = Rs.\ 16000$	$16000 - 6400 = Rs.\ 9600$
C	$\frac{5100}{0.85} = Rs.\ 6000$	$\frac{6000}{0.60} = Rs.\ 10000$	$10000 - 6000 = Rs.\ 4000$
D	$\frac{5400}{0.60} = Rs.\ 9000$	$\frac{9000}{0.50} = Rs.\ 18000$	$18000 - 9000 = Rs.\ 9000$
E	$\frac{8100}{0.75} = Rs.\ 10800$	$\frac{10800}{0.45} = Rs.\ 24000$	$24000 - 10800 = Rs.\ 13200$

According to question,

Required percentage $= \frac{6600 + 4000}{6600 + 9600 + 4000 + 9000 + 13200} \times 100 = \frac{10600}{42400} \times 100 = 25\%$

Level-3

Q1. Text Solution:

LCM of 30, 24, and 10 = 360

Hence,

A= 360/30 = 12

F = 360/24 = 15

D = 360/10 = 36

Work done by A = 12P

F = 15Q

D = 36 * 3 = 108

12P + 15Q + 108 = 360

$\frac{P}{Q} = \frac{1}{2}$

2P = Q

12P +$15 \times 2P$+ 108 = 360

42P = 252

P = 6

Q = 2×6

y=12 weeks

Q2. Text Solution:

75% of C's efficiency = 15

A worked 25% more efficiently = 15

B = 30

A, C and B = 15: 15: 30

A, C and B = 1: 1: 2

Total wage = 60000

A's wages = 1/4×60000 = Rs.15000

Q3. Text Solution:

average of A, D and F efficiency = $\frac{12+36+15}{3} = \frac{63}{3}$

average of B,C and E efficiency= $\frac{30+20+24}{3} = \frac{74}{3}$

ratio=$\frac{63}{74}$

Q4. Text Solution:

Work done by E = 24P

Work done by A and C in (P + 2.5) weeks

(A + C) = 20 + 12 = 32

A and C together can complete 66(2/3)% of the work.

$\frac{24P}{32\times(P+2.5)} = \frac{\left(\frac{100}{3}\right)}{\left(\frac{200}{3}\right)}$

48P = 32P + 32 × 2.5

16P = 32 ×2.5

P = 5 weeks

Q5. Text Solution:

From the graph we have:

Tank	Length	Width	Height	Volume (liters)
Tank 1	7	10	3.5	245000
Tank 2	8	8.5	3	204000
Tank 3	6	6	6	216000
Tank 4	5	8	5.5	220000
Tank 5	7.5	6	5	225000
Tank 6	6	7	5	210000

Pipe A can fill tank 1 in 3500 minutes Fill rate of pipe A = $\frac{245000}{3500}$ = 70 l/min

Pipes A and B together can fill tank 2 in 1700 minutes.

Fill rate of pipe A and B = $\frac{204000}{1700}$ = 120 l/min

Fill rate of pipe B = 120-70 = 50 l/min

Pipes B and C together can fill tank 4 in 2000 minutes.

Fill rate of pipe B and C = $\frac{220000}{2000}$ = 110 l/min

Fill rate of pipe C = 110 - 50 = 60 l/min

Pipes C and D together can fill tank 3 in 2000 minutes.

Fill rate of pipe C and D = $\frac{216000}{2000}$ = 108 l/min

Fill rate of pipe D = 108 - 60 = 48 l/min

Required ratio = 60:48 = 5:4

Q6. Text Solution:

From the graph we have:

Tank	Length	Width	Height	Volume (liters)
Tank 1	7	10	3.5	245000
Tank 2	8	8.5	3	204000
Tank 3	6	6	6	216000
Tank 4	5	8	5.5	220000
Tank 5	7.5	6	5	225000
Tank 6	6	7	5	210000

Pipe A can fill tank 1 in 3500 minutes Fill rate of pipe A = $\frac{245000}{3500}$ = 70 l/min

Pipes A and B together can fill tank 2 in 1700 minutes.

Fill rate of pipe A and B = $\frac{204000}{1700}$ = 120 l/min

Fill rate of pipe B = 120-70 = 50 l/min

Pipes B and C together can fill tank 4 in 2000 minutes.

Fill rate of pipe B and C = $\frac{220000}{2000}$ = 110 l/min

Fill rate of pipe C = 110 - 50 = 60 l/min

Pipes C and D together can fill tank 3 in 2000 minutes.

Fill rate of pipe C and D = $\frac{216000}{2000}$ = 108 l/min

Fill rate of pipe D = 108 - 60 = 48 l/min

Required time = $\frac{225000}{50}$ = 4500 minutes

Q7. Text Solution:

From the graph we have:

Tank	Length	Width	Height	Volume (liters)
Tank 1	7	10	3.5	245000
Tank 2	8	8.5	3	204000
Tank 3	6	6	6	216000
Tank 4	5	8	5.5	220000
Tank 5	7.5	6	5	225000
Tank 6	6	7	5	210000

Pipe A can fill tank 1 in 3500 minutes Fill rate of pipe A = $\frac{245000}{3500}$ = 70 l/min

Pipes A and B together can fill tank 2 in 1700 minutes.

Fill rate of pipe A and B = $\frac{204000}{1700}$ = 120 l/min

Fill rate of pipe B = 120-70 = 50 l/min

Pipes B and C together can fill tank 4 in 2000 minutes.

Fill rate of pipe B and C = $\frac{220000}{2000}$ = 110 l/min

Fill rate of pipe C = 110 - 50 = 60 l/min

Pipes C and D together can fill tank 3 in 2000 minutes.

Fill rate of pipe C and D = $\frac{216000}{2000}$ = 108 l/min

Fill rate of pipe D = 108 - 60 = 48 l/min

Required time = $\frac{245000}{(50+48)}$ = 2500 minutes

Q8. Text Solution:

From the graph we have:

Tank	Length	Width	Height	Volume (liters)
Tank 1	7	10	3.5	245000
Tank 2	8	8.5	3	204000
Tank 3	6	6	6	216000
Tank 4	5	8	5.5	220000
Tank 5	7.5	6	5	225000
Tank 6	6	7	5	210000

Pipe A can fill tank 1 in 3500 minutes Fill rate of pipe A = $\frac{245000}{3500}$ = 70 l/min

Pipes A and B together can fill tank 2 in 1700 minutes.

Fill rate of pipe A and B = $\frac{204000}{1700}$ = 120 l/min

Fill rate of pipe B = 120-70 = 50 l/min

Pipes B and C together can fill tank 4 in 2000 minutes.

Fill rate of pipe B and C = $\frac{220000}{2000}$ = 110 l/min

Fill rate of pipe C = 110 - 50 = 60 l/min

Pipes C and D together can fill tank 3 in 2000 minutes.

Fill rate of pipe C and D = $\frac{216000}{2000}$ = 108 l/min

Fill rate of pipe D = 108 - 60 = 48 l/min

Volume of tank filled = 70 x 1000 + 60 x 1500 = 160000 liters

1000+1500=2500 minute

Volume remaining to be filled by pipe B = 210000 – 160000 = 50000 liters

Required time = 2500 + $\frac{50000}{50}$ = 3500 minutes

Q9 Text Solution:

Common Solution:

Let quantities of mustard oil sold on Wed and Thu are '3x' L and '4x' L respectively.

So, quantity of coconut oil sold on Wed = (3x - 10) L

Quantity of coconut oil sold on Thu = (4x - 20) L

Quantity of peanut oil sold on Wed = 25% of '3x' = $\frac{3x}{4}$ L

And quantity of peanut oil sold on Thu = 20% of '4x' = $\frac{4x}{5}$ L

If cost of coconut oil is ₹150 per L and cost of peanut oil is ₹200 per L.

So, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed:

$(3x - 10) \times 150 + \frac{3x}{4} \times 200$

$450x - 1500 + 150x$

$600x - 1500$

And total amount received by the shopkeeper by selling coconut oil and peanut oil on Thu:

$(4x - 20) \times 150 + \frac{4x}{5} \times 200$

$600x - 3000 + 160x$

$760x - 3000$

Since, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that on Thu.

So,

$760x - 3000 - 600x + 1500 = 420$

$x = 12$

Quantity of mustard oil sold on Wed = 3 × 12 = 36 L

Quantity of coconut oil sold on Wed = 36 - 10 = 26 L

Quantity of peanut oil sold on Wed = 25% of 36 = 9 L

Quantity of mustard oil sold on Thu = 4 × 12 = 48 L

Quantity of coconut oil sold on Thu = 48 - 20 = 28 L

Quantity of peanut oil sold on Thu = 20% of 48 = 9.6 L

Quantity of coconut oil sold on Thu = 28 L

Quantity of coconut oil sold on Tue = 125% of 28 = 35 L

Quantity of mustard oil sold on Tue = 35 + 15 = 50 L

Quantity of peanut oil sold on Tue = 30% of 50 = 15 L

Quantity of peanut oil sold on Thu = 9.6 L

Required ratio = 15: 9.6 = 25: 16

Q10 Text Solution:

Common Solution:

Let quantities of mustard oil sold on Wed and Thu are '3x' L and '4x' L respectively.

So, quantity of coconut oil sold on Wed = (3x - 10) L

Quantity of coconut oil sold on Thu = (4x - 20) L

Quantity of peanut oil sold on Wed = 25% of '3x' = $\frac{3x}{4}$ L

And quantity of peanut oil sold on Thu = 20% of '4x' = $\frac{4x}{5}$ L

If cost of coconut oil is ₹150 per L and cost of peanut oil is ₹200 per L.

So, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed:

$(3x - 10) \times 150 + \frac{3x}{4} \times 200$

$450x - 1500 + 150x$

$600x - 1500$

And total amount received by the shopkeeper by selling coconut oil and peanut oil on Thu:

$(4x - 20) \times 150 + \frac{4x}{5} \times 200$

$600x - 3000 + 160x$

$760x - 3000$

Since, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that on Thu.

So,

$760x - 3000 - 600x + 1500 = 420$

$x = 12$

Quantity of mustard oil sold on Wed = 3 × 12 = 36 L

Quantity of coconut oil sold on Wed = 36 - 10 = 26 L

Quantity of peanut oil sold on Wed = 25% of 36 = 9 L

Quantity of mustard oil sold on Thu = 4 × 12 = 48 L

Quantity of coconut oil sold on Thu = 48 - 20 = 28 L

Quantity of peanut oil sold on Thu = 20% of 48 = 9.6 L

Since, quantity of peanut oil sold on Wed = 9 L

So, quantity of peanut oil sold on Fri = 2 × 9 = 18 L

Quantity of mustard oil sold on Fri = $18 \times \frac{100}{45}$ = 40 L

And quantity of mustard oil sold on Tue = 40 + 10 = 50 L

Since, quantity of mustard oil sold on Wed = 36 L

So, required average = $\frac{40+50+36}{3}$ = 42 L

Q11 Text Solution:

Common Solution:

Let quantities of mustard oil sold on Wed and Thu are '3x' L and '4x' L respectively.

So, quantity of coconut oil sold on Wed = (3x - 10) L

Quantity of coconut oil sold on Thu = (4x - 20) L

Quantity of peanut oil sold on Wed = 25% of '3x' = $\frac{3x}{4}$ L

And quantity of peanut oil sold on Thu = 20% of '4x' = $\frac{4x}{5}$ L

If cost of coconut oil is ₹150 per L and cost of peanut oil is ₹200 per L.

So, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed:

$(3x - 10) \times 150 + \frac{3x}{4} \times 200$

450x - 1500 + 150x

600x - 1500

And total amount received by the shopkeeper by selling coconut oil and peanut oil on Thu:

$(4x - 20) \times 150 + \frac{4x}{5} \times 200$

600x - 3000 + 160x

760x - 3000

Since, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that on Thu.

So,

760x - 3000 - 600x + 1500 = 420

x = 12

Quantity of mustard oil sold on Wed = 3 × 12 = 36 L

Quantity of coconut oil sold on Wed = 36 - 10 = 26 L

Quantity of peanut oil sold on Wed = 25% of 36 = 9 L

Quantity of mustard oil sold on Thu = 4 × 12 = 48 L

Quantity of coconut oil sold on Thu = 48 - 20 = 28 L

Quantity of peanut oil sold on Thu = 20% of 48 = 9.6 L

Let the quantity of mustard oil sold on Mon = 10y L

So, quantity of coconut oil sold on Mon = (10y - 5) L

And quantity of peanut oil sold on Mon = 35% of 10y = 3.5y L

Total quantity of mustard oil, coconut oil and peanut oil sold on Thu = 48 + 28 + 9.6 = 85.6 L

So, total quantity of mustard oil, coconut oil and peanut oil sold on Mon:

10y + (10y - 5) + 3.5y = 85.6 - 15.4

23.5y = 75.2

y = 3.2

Quantity of coconut oil sold on Mon = 10 × 3.2 - 5 = 27 L

Quantity of peanut oil sold on Mon = 3.5 × 3.2 = 11.2 L

Required average = $\frac{27+11.2}{2}$ = 19.1 L

Q12 Text Solution:

Common Solution:

Let quantities of mustard oil sold on Wed and Thu are '3x' L and '4x' L respectively.

So, quantity of coconut oil sold on Wed = (3x - 10) L

Quantity of coconut oil sold on Thu = (4x - 20) L
Quantity of peanut oil sold on Wed = 25% of '3x' = $\frac{3x}{4}$ L
And quantity of peanut oil sold on Thu = 20% of '4x' = $\frac{4x}{5}$ L
If cost of coconut oil is ₹150 per L and cost of peanut oil is ₹200 per L.
So, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed:
$(3x - 10) \times 150 + \frac{3x}{4} \times 200$
450x - 1500 + 150x
600x - 1500
And total amount received by the shopkeeper by selling coconut oil and peanut oil on Thu:
$(4x - 20) \times 150 + \frac{4x}{5} \times 200$
600x - 3000 + 160x
760x - 3000
Since, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that on Thu.
So,
760x - 3000 - 600x + 1500 = 420
x = 12
Quantity of mustard oil sold on Wed = 3 × 12 = 36 L
Quantity of coconut oil sold on Wed = 36 - 10 = 26 L
Quantity of peanut oil sold on Wed = 25% of 36 = 9 L
Quantity of mustard oil sold on Thu = 4 × 12 = 48 L
Quantity of coconut oil sold on Thu = 48 - 20 = 28 L
Quantity of peanut oil sold on Thu = 20% of 48 = 9.6 L
Since, quantity of mustard oil sold on Wed = 36 L
So, quantity of mustard oil sold on Tue = $36 \times \frac{100}{90}$ = 40 L
Quantity of coconut oil sold on Tue = 40 - 15 = 25 L
And quantity of peanut oil sold on Tue = 30% of 40 = 12 L
Since, costs of mustard oil, coconut oil and peanut oil are ₹180 per L, ₹150 per L and ₹200 per L respectively.
So, total amount received by the shopkeeper on Tue:
40 × 180 + 25 × 150 + 12 × 200
7200 + 3750 + 2400
₹13350

Q13 Text Solution:
Common Solution:
Let quantities of mustard oil sold on Wed and Thu are '3x' L and '4x' L respectively.
So, quantity of coconut oil sold on Wed = (3x - 10) L
Quantity of coconut oil sold on Thu = (4x - 20) L
Quantity of peanut oil sold on Wed = 25% of '3x' = $\frac{3x}{4}$ L
And quantity of peanut oil sold on Thu = 20% of '4x' = $\frac{4x}{5}$ L
If cost of coconut oil is ₹150 per L and cost of peanut oil is ₹200 per L.
So, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed:
$(3x - 10) \times 150 + \frac{3x}{4} \times 200$
450x - 1500 + 150x
600x - 1500
And total amount received by the shopkeeper by selling coconut oil and peanut oil on Thu:
$(4x - 20) \times 150 + \frac{4x}{5} \times 200$
600x - 3000 + 160x
760x - 3000
Since, total amount received by the shopkeeper by selling coconut oil and peanut oil on Wed is ₹420 less than that on Thu.
So,

760x - 3000 - 600x + 1500 = 420

x = 12

Quantity of mustard oil sold on Wed = 3 × 12 = 36 L

Quantity of coconut oil sold on Wed = 36 - 10 = 26 L

Quantity of peanut oil sold on Wed = 25% of 36 = 9 L

Quantity of mustard oil sold on Thu = 4 × 12 = 48 L

Quantity of coconut oil sold on Thu = 48 - 20 = 28 L

Quantity of peanut oil sold on Thu = 20% of 48 = 9.6 L

Since, quantity of mustard oil sold on Thu = 48 L

So, quantity of mustard oil sold on Mon = 75% of 48 = 36 L

Quantity of mustard oil sold on Tue = 112.5% of 48 = 54 L

And quantity of mustard oil sold on Fri = 66.67% of 48 = 32 L

Now,

Quantity of coconut oil sold on Mon = 36 - 5 = 31 L

Quantity of coconut oil sold on Tue = 54 - 15 = 39 L

Quantity of coconut oil sold on Wed = 26 L

Quantity of coconut oil sold on Thu = 28 L

Quantity of coconut oil sold on Fri = 32 - 15 = 17 L

Required average $= \frac{31+39+26+28+17}{5}$ = 28.2 L

Q14 Text Solution:

Common Explanation:

As per the radar graph,

Let the total students in all sections $= 100 \times m$

Let the total females in all sections $= 100 \times n$

$\frac{1}{3} \times$ students in section E and F=65

(17.5+15)m=195

$= 32.5 \times m = 195$

Thus, $m = 6$

Total students in all the sections $= 600$

Students in section A $= 90$

Students in section B $= 120$

Students in section C $= 75$

Students in section D $= 120$

Students in section E $= 105$

Students in section F $= 90$

Males in section F $= 20$

Females in section F $= 70$

Males in section F: females in section F $= 2:7$

Now total females $= 250$

28=70

12=$\frac{70}{28} \times 12 = 30$

Females in section A $= 30$

28=70

20=$\frac{70}{28} \times 20 = 50$

Females in section B $= 50$

28=70

12=30

Females in section C $= 30$

28=70

16=40

Females in section D $= 40$

28=70

12=30

Females in section E $= 30$

28=70

Females in section F $= 70$

Total males $= 600 - 250 = 350$

Males in section A $= 60$

Males in section B $= 70$

Males in section C $= 45$

Males in section D $= 80$

Males in section E $= 75$

Males in section F $= 20$

According to question,

Females from section A buy movie tickets

Males from section F buy movie tickets

Tickets cost them Rs. 10800

$= 30x + 20x = 10800$

So, $x = 216$

Cost of each ticket $= Rs.216$

Sol

Q15 Text Solution:

Common Explanation:

As per the radar graph,

Let the total students in all sections $= 100 \times m$

Let the total females in all sections $= 100 \times n$

$\frac{1}{3} \times$ Students in section E and F = 65

(17.5+15)m=195

$= 32.5 \times m = 195$

Thus, $m = 6$

Total students in all the sections $= 600$

Students in section A $= 90$

Students in section B $= 120$

Students in section C $= 75$

Students in section D $= 120$

Students in section E $= 105$

Students in section F $= 90$

Males in section F $= 20$

Females in section F $= 70$

Males in section F: females in section F $= 2 : 7$

Now total females $= 250$

28=70

12=$\frac{70}{28} \times 12 = 30$

Females in section A $= 30$

28=70

20=$\frac{70}{28} \times 20 = 50$

Females in section B $= 50$

28=70

12=30

Females in section C $= 30$

28=70

16=40

Females in section D $= 40$

28=70

12=30

Females in section E $= 30$

28=70

Females in section F $= 70$

Total males $= 600 - 250 = 350$

Males in section A $= 60$

Males in section B $= 70$

Males in section C $= 45$

Males in section D $= 80$

Males in section E $= 75$

Males in section F $= 20$

According to question,

Females in section B $= 50$

Total students in section B $= 120$

Required percentage $= \frac{70}{120} \times 100 = 58.33\%$

Q16 Text Solution:

Common Explanation:

As per the radar graph,

Let the total students in all sections $= 100 \times m$

Let the total females in all sections $= 100 \times n$

$\frac{1}{3} \times$ Students in section E and F = 65

(17.5+15)m=195

$= 32.5 \times m = 195$

Thus, $m = 6$

Total students in all the sections $= 600$

Students in section A $= 90$

Students in section B $= 120$

Students in section C $= 75$

Students in section D $= 120$

Students in section E $= 105$

Students in section F $= 90$

Males in section F $= 20$

Females in section F $= 70$

Males in section F: females in section F $= 2 : 7$

Now total females $= 250$

28=70

12=$\frac{70}{28} \times 12 = 30$

Females in section A = 30
28=70
20=$\frac{70}{28} \times 20 = 50$
Females in section B = 50
28=70
12=30
Females in section C = 30
28=70
16=40
Females in section D = 40
28=70
12=30
Females in section E = 30
28=70
Females in section F = 70
Total males = $600 - 250 = 350$
Males in section A = 60
Males in section B = 70
Males in section C = 45
Males in section D = 80
Males in section E = 75
Males in section F = 20
According to question,
Average count of females in sections A, B, C and D = $\frac{150}{4}$
Average males in sections A, C and E = $\frac{180}{3}$
Required ratio = $5 : 8$

Q17 Text Solution:

Common Explanation:

As per the radar graph,
Let the total students in all sections = $100 \times m$
Let the total females in all sections = $100 \times n$
$\frac{1}{3}\times$ Students in section E and F = 65
(17.5+15)m=195
$= 32.5 \times m = 195$
Thus, $m = 6$
Total students in all the sections = 600
Students in section A = 90
Students in section B = 120
Students in section C = 75
Students in section D = 120
Students in section E = 105
Students in section F = 90
Males in section F = 20
Females in section F = 70
Males in section F: females in section F = $2 : 7$
Now total females = 250
28=70
12=$\frac{70}{28} \times 12 = 30$
Females in section A = 30
28=70
20=$\frac{70}{28} \times 20 = 50$
Females in section B = 50
28=70
12=30
Females in section C = 30
28=70
16=40
Females in section D = 40
28=70
12=30
Females in section E = 30
28=70
Females in section F = 70
Total males = $600 - 250 = 350$
Males in section A = 60
Males in section B = 70
Males in section C = 45
Males in section D = 80
Males in section E = 75
Males in section F = 20
According to question,
Females in sections D and E together = 70
Males in section E = 75
Required percentage = $\frac{70}{75} \times 100 = 93.33\%$
Females in sections D and E are 93.33% of the males in section E

Q18 Text Solution:

Common Explanation:

As per the radar graph,

Let the total students in all sections $= 100 \times m$

Let the total females in all sections $= 100 \times n$

$\frac{1}{3} \times$ Students in section E and F = 65

(17.5+15)m=195

$= 32.5 \times m = 195$

Thus, $m = 6$

Total students in all the sections $= 600$

Students in section A $= 90$

Students in section B $= 120$

Students in section C $= 75$

Students in section D $= 120$

Students in section E $= 105$

Students in section F $= 90$

Males in section F $= 20$

Females in section F $= 70$

Males in section F: females in section F $= 2 : 7$

Now total females $= 250$

28=70

12=$\frac{70}{28} \times 12 = 30$

Females in section A $= 30$

28=70

20=$\frac{70}{28} \times 20 = 50$

Females in section B $= 50$

28=70

12=30

Females in section C $= 30$

28=70

16=40

Females in section D $= 40$

28=70

12=30

Females in section E $= 30$

28=70

Females in section F $= 70$

Total males $= 600 - 250 = 350$

Males in section A $= 60$

Males in section B $= 70$

Males in section C $= 45$

Males in section D $= 80$

Males in section E $= 75$

Males in section F $= 20$

According to question,

Females in section P $= 110\% \times$ females in section B

Males in section P $= 80\% \times$ total students in section A

In section P, females: males $= 1 : 4$

Thus, females in P $= 55$

Males $= 220$

Total males in sections P and C $= 220 + 45 = 265$