

# Formation and conversion of graphs

DI - 3

There are many ways to present data. In the data interpretation section of the MBA entrance tests, you see very many types of data - word, tabulated, graphical, diagrammed, chart form. (explained in DI part -1). Knowledge of how graphs are formed and how they are converted into readable form will contribute to answering DI questions efficiently.

### 1. Conversion of word data into line graph

Line graph represents variation of a parameter with respect to another parameter often done in x-y axis.

Observe this case

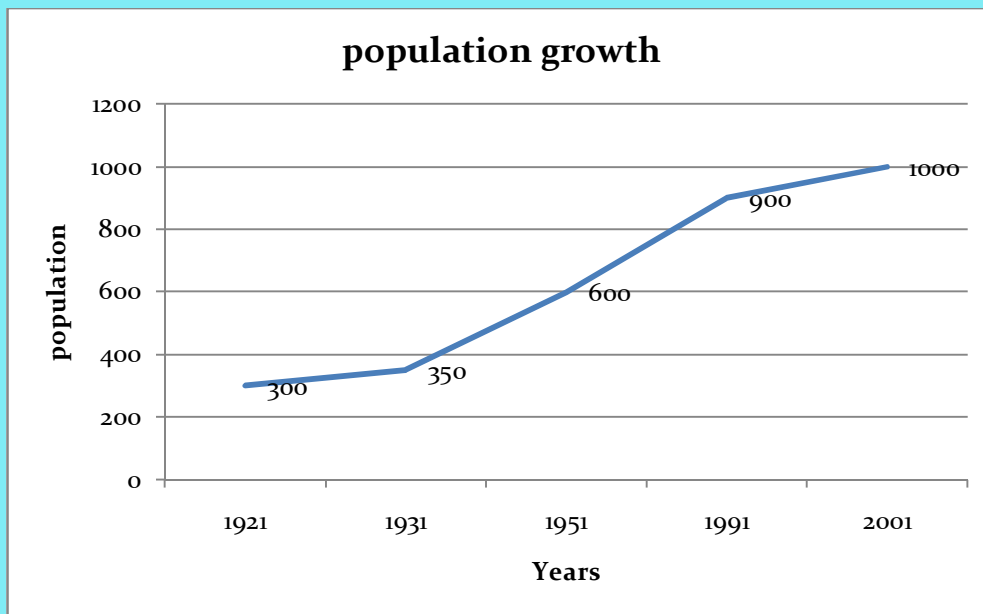
#### Word data

In India, the population is growing day by day. In 1921, the population was 300 million, in 1931 it was 350 million, in 1951 it was 600 million. According to 1991 census, population has grown to 900 millions. In 2001, it reached 1 billion. This data can be presented as a line graph as shown in figure below.

How do we convert the word data into a line graph?

1. Represent number of years in x axis and the population in y axis.
2. Plot the population in terms of x axis and y axis. Eg. Mark 300 million in

line with 1921. Repeat the same plotting for the other values.



### Advantages of converting into line graph:

The growth rate between two successive years is easily observed in line graph. The line with the steepest gradient represents the highest growth rate.

## 2. Conversion of word data into table

Any statistical data can be represented in the form of a table. It is one of the easiest and the most accurate ways of presenting data other than graph. It correlates two things or measures at a time. The difficulty associated with this type of data representation is that it requires much closer reading as compared to other forms of data representation like bar graphs and pie

charts. Hence they are comparatively complicated and time-consuming to interpret. The calculations to be done on the basis of numerical table in order to draw inferences are easy in terms of formulae but on the other hand they take some time to solve.

Lets observe this case

### Word data

In a reputed automobile company the production of bikes during 1994 – 95 is 54083 units where as during 1995 – 96, it was 54735 units. The company produced 66620 bikes during 1996 – 97 and 83802 units during 1997-98. The company produced 50252 cars units in 1994 -95, 69037 in 1995 – 96, 78366 car units in 1996 – 97 and 81955 cars in 1997- 98.

How do we convert this paragraph into a data table?

1. Represent the number of units of bikes and cars in two columns. Write the year in a third column
2. Write the number of units of cars and bikes for the particular year- such as 54083 bikes and 50252 cars in 1994 - 95. Repeat for the other values.

Year	Bikes	Cars
1994 – 95	54083	50252
1995 – 96	54735	69037
1996 – 97	66620	78366

1997 – 98	83802	81955
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### Advantages of converting word data into table:

Analyzing the data into percentages and ratios is easier in a table form than in other representations. It's also simpler to make decisions (which data is the maximum/minimum value)

### 3. Conversion of word data into bar chart:

In this method of data representation, the data is plotted on the X and Y axes as bars. This method of data presentation is more or less similar to the one in line graphs except that the data plotted on line graphs is continuous whereas in bar chart the data is discrete. Bar charts have one advantage over line graphs in that these are much more accurate since they do not involve any interpolation or extrapolation between two points and data measurement. Presentation of data in this format makes comparative evaluation of parameters very easy.

Lets observe this case

#### Word data

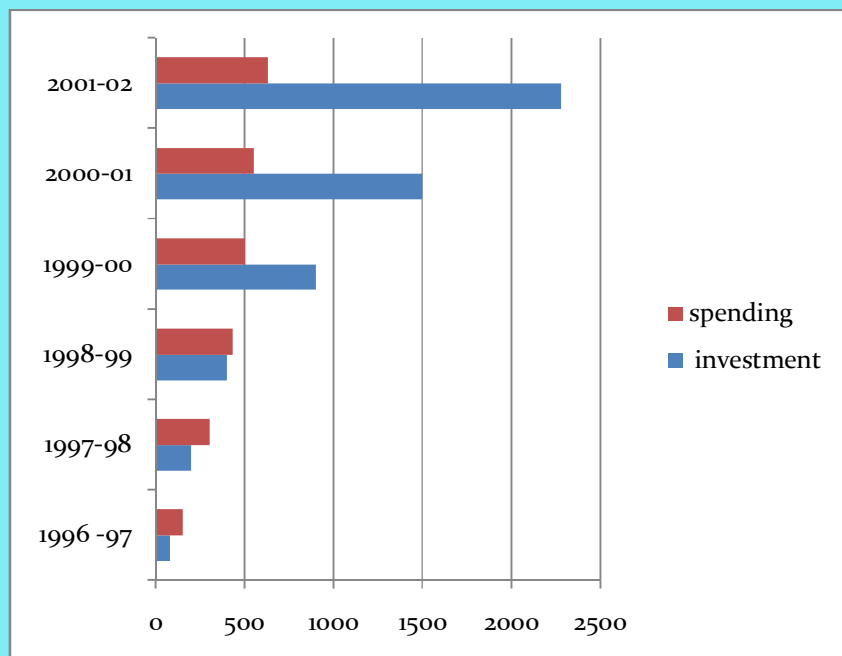
A startup company had varied investment and spending in the six years since its inception. In 1996 – 97, 80 million was made as investment and 150 million was spent. During the period of 1997 – 98, the company invested 200 million and spent 300 millions. In 1998 – 99 it was 400 million and 430

million respectively. In 1999 – 00, 900 million was the investment and 500 million expenditure. During the period of 2000 – 01, 1500 million was investment and 550 millions was spent. In 2001 – 02, 2775 million was invested as against 630 million expenditure.

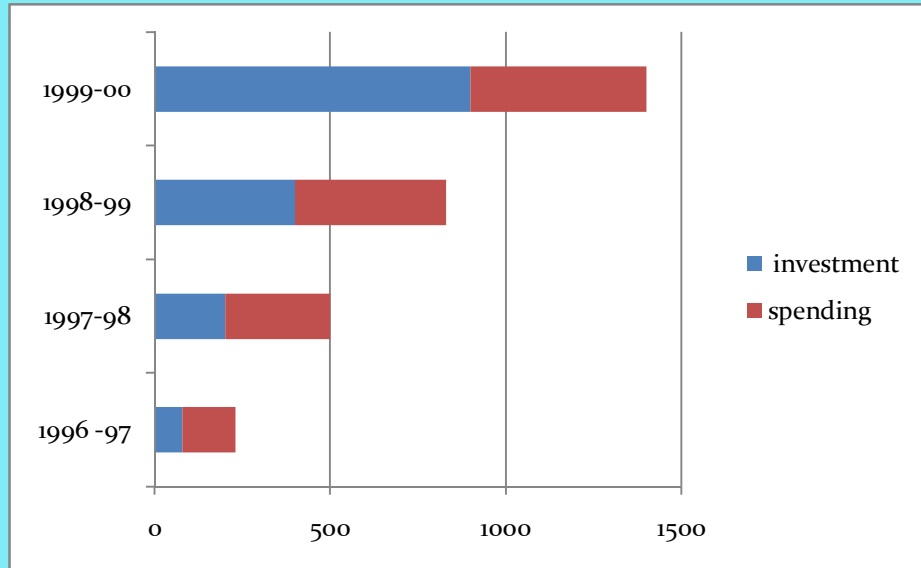
How do we convert this paragraph into a line graph?

1. Represent investments and expenditure in y axis and years in x axis.
2. Plot investment and spending in terms of x axis and y axis. For instance mark 80 million investment and 150 million spending against the year 1996-97. Repeat for the other values. The above data can be drawn as bar graph.

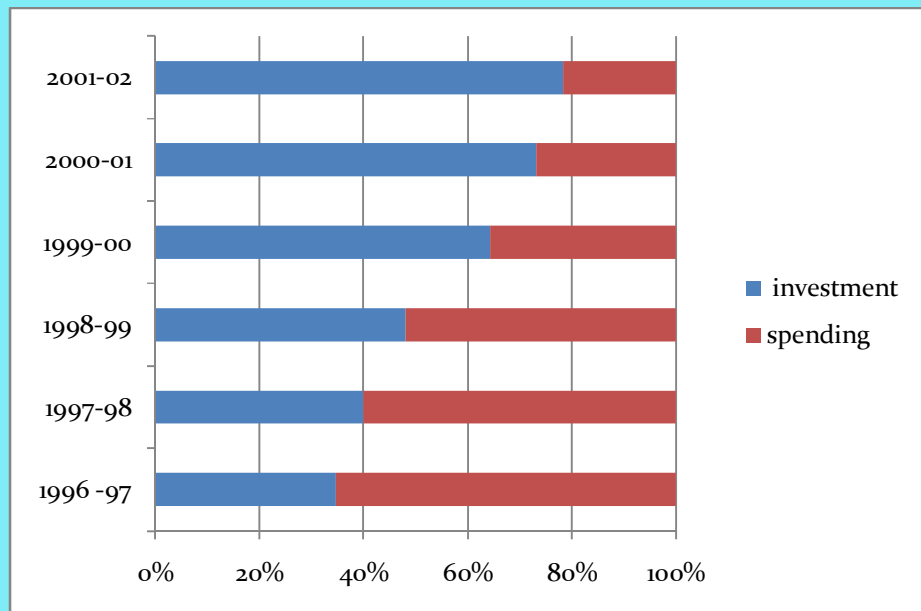
(i) Clustered bar graph



(2) Stacked bar graph



(3) 100% stacked bar



#### 4. Conversion of word data into network

Network graphs are used to represent the relationship of the data in two (or) more ways.

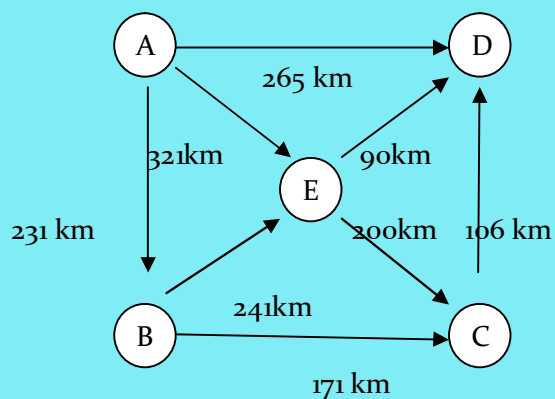
Lets observe this case

##### Word data:

There are five cities A, B, C, D, E. A is located at a distance of 321 km from E , 265 km from D, 231 km from B. B is located at 241 km from E, 171 km from C. C is located 100 km from D and E is located 90 km to D and 200 km to C.

How do we convert this word data into a line graph?

1. Represent each city in circle
2. Draw the arrow mark based on the routes given in the question. For instance A-B – 231 km. Repeat for the other values



The table below gives the info about the cost of travel in all routes. Find the cost per km for each route?

COST OF TRAVEL	A	B	C	D	E
A	-	250	450	300	350
B	250	-	175	350	250
C	450	175	-	150	190
D	300	350	150	-	140
E	350	250	190	140	-

Cost per km in A – B route =  $250/231 = 1.08$

Cost per km	A	B	C	D	E
A	-	1.08			
B	1.08				
C					
D					
E					

### 5. Conversion of word data into pie chart

In this method, the total quantity of items is distributed over a total angle of  $360^\circ$ , which is one complete circle or a pie. Unlike the bar charts in which the variables can be plotted on two co-ordinates X and Y, here the data can be plotted with respect to only one parameter. Hence, its usage is restricted. It is best used when data pertaining to shares of various parts of a particular quantity are to be shown. This method is also useful for representing proportions or percentages of various elements with respect to the total quantity.

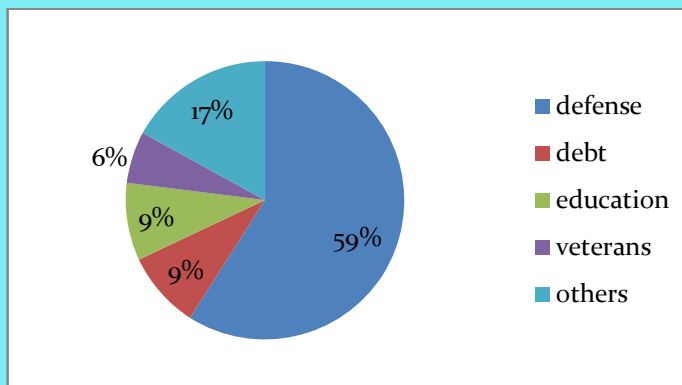
Lets observe this case

**Word data:**

In the year 2000, of the nation's budget expenditure, 59% was allocated for defense, 9% for interest on debt, 9% for education, 6% on healthcare and other expenses 17%.

How do we convert this data into a pie?

1. Represent budget details as a circle.
2. Split the circle in terms of percentages given for each parameter. For instance 59 % for defense. Repeat for the other values.



Note : In the above conversion, we can convert pie chart to table. Say for instance, I million was allocated for total expenditure. Now  $\frac{59}{100} * 1$  million was allocated for defense. Similarly for the others, we can compute the value and tabulate it.

### Advantages of converting to pie chart:

Analyzing the data in percentage term is easier using pie chart. It represents the split up of variable.

### Practice problems - 1 :

1. A college had 5 faculty members and 70 students during 1995 – 96, 3 faculty and 80 students in 1996 – 97, 10 faculty and 100 students in 1997 – 98, 14 faculty and 200 students in 1998 – 99 and finally, in 1999 – 00, there were 20 faculty and 226 student.

Draw a bar graph to represent the data.

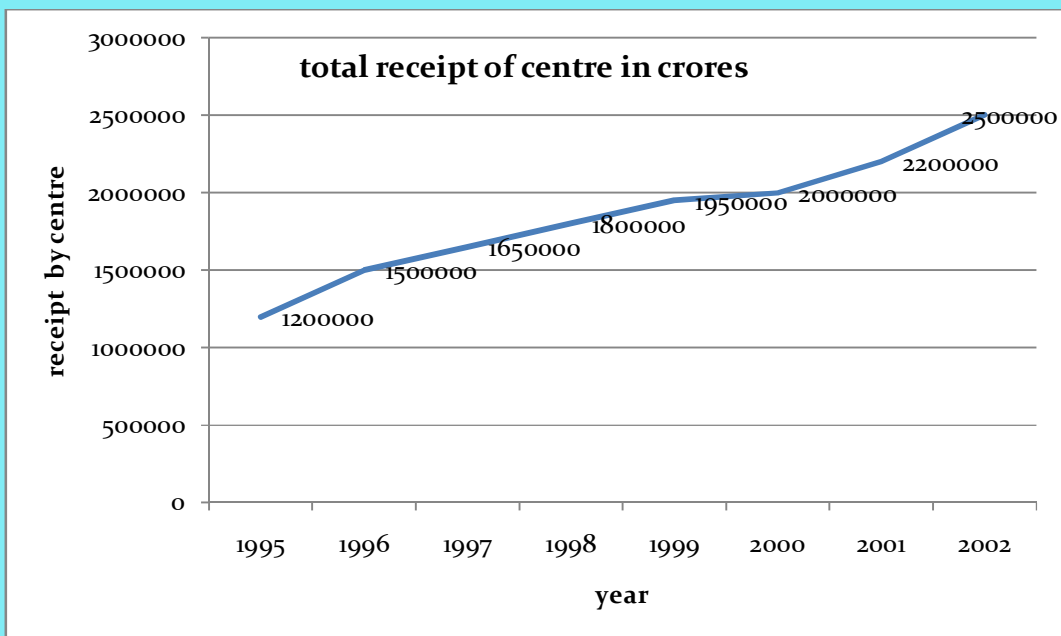
2. In a company, foreign investment flowed through various structures in 1998 – 99, - 34% to SIA, NRI -11%, FII'S -33% whereas Euro equities contributed 16%. RBI had 2% while others had 4%.

Draw pie chart and then tabulate into table if total investment flow is US \$5706 million.

3. India's foreign trade for the previous years was good. In 1995 – 96, it had 6000 crore as exports and 5000 crore as imports. In 1996 – 1997, it had 5800 crores as export and 4900 crore as imports. For the year 1997 – 1998, India had 7000 crore as export and 6000 crores as imports. In the year 1998 – 99, the export of India was 8000 crores and imports was 5500 crores.

## 6. Conversion of line graph to word data

In the previous discussion, we have seen how word data is converted to chart. Now we will learn how to convert a chart in to words. This helps you to understand how to draw inference from charts.



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The diagram represents the total receipts of a centre (in crores)

In 1995, 1200000 crores was received by the centre. In 1996, 1500000 crores

was received by the centre. Similarly 1650000 crores in 1997, 1800000 crores in 1998, 1950000 crores in 1999, 2000000 crores in 2000, 2200000 crores in 2001 and 2500000 crores in 2002 was received by the centre. There is sharp increase of total receipts from 1995 to 1996. From 1996 to 1999 the total receipts rose gradually. There was not much growth between 1999 to 2000. The collection increased steadily from 2001 onwards.

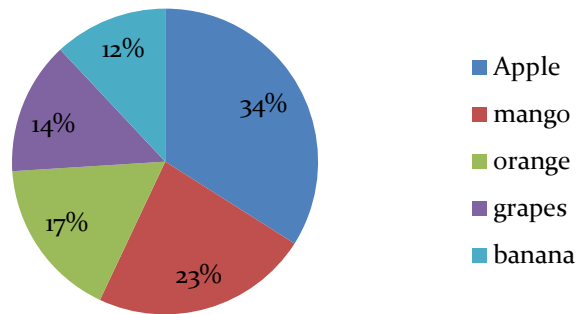
The above data can be made as table.

Year	Total receipt for centre in crores
1995	1200000
1996	1500000
1997	1650000
1998	1800000
1999	1950000
2000	2000000
2001	2200000
2002	2500000

## 7. Conversion of pie chart to word data

We have converted line graph to word data. Like wise all graphical data can be converted into word data. Let's take a pie chart.

preference of fruit among children



The pie chart presents data on children's preference of fruits. 34% of children preferred apples to other fruits. The second preferred fruit was mango with 23% preferring it. Orange is liked by 17%. With only 12% liking it banana was the least preferred.

## 8. Conversion of complex graphs into simplified form

Data table, line graph, bar charts and pie charts are some of the most commonly used forms of data presentation. At times only one form of presentation such as a graph, table or bar chart is sufficient to explain a situation.

Lets take a case

A census report on population in various states for a particular period can be fully represented by a line diagram. However, in some situations a single

form of representation is not always sufficient. In situations where the desired parameter is a function of two or three variables the data has to be presented as a combination of two or more forms.

The style of data presentation is chosen based on the end objective in mind. So, one may have the data presented in terms of a numerical data table, bar chart, line graph and the pie chart at the same time. In such cases the following strategies of interpretation is effective.

- Identity the kind of data presented in each form. For example, on a bar chart it might be the amount of materials produced by a firm in consecutive years while the corresponding line graph might give the price/unit in those years.
- Based on the parameter to be determined, establish a functional relationship between the various forms.

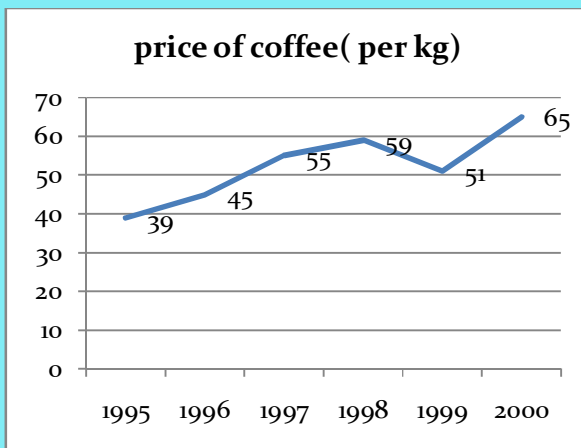
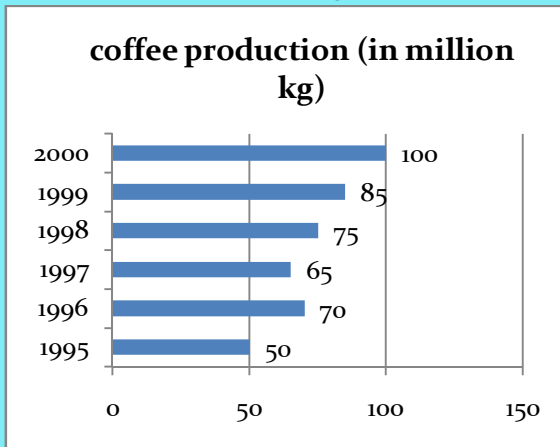
For example, Revenue of firm in year X = amount of material produced in year \* (Bar chart) \* Price/unit (line graph)

Look out for the common parameter that connects the graphs.

At times, when one graph shows data of different years, the other graph might give detailed information about a single year.

Now read the data from the graph and the bar chart to compute the revenue for year X.

Bar chart and line graph



The bar chart presents coffee production during consecutive years while the line graph denotes the price of tea in these years. Studying these two charts we can obtain the following information:

- 1] total production of coffee (in kilos)
- 2] The price of coffee vis a vis production.
- 3] The growth or fall rate in coffee production as well as percentage variation in price.
- 4] Cumulative coffee production in terms of value and quantity

## 9. Conversion of graphs in problems

### *Problem 1:*

There are three stationery shops namely shop 1, shop 2 and Shop 3 that sell five different types of articles namely pencils, erasers, pens, diaries, staplers. On a particular day, five students namely Ram, Ramu, Ramya, Ramy, Rambo bought articles from these shops. Ramy did not buy eraser from shop II.

Table 1 provides information about the number of articles of each type bought from each of the three shops.

Table 2 provides information about the number of articles bought by each child from each of the three shops.

Table 3 provides information about the number of articles of each type bought by each of five students.

Table 1

	Shop 1	Shop 2	Shop 3
Eraser	2	2	1
Pen	2	1	3
Pencil	1	0	2
diaries	1	3	1
staplers	1	1	0

Table 2

	Shop 1	Shop 2	Shop 3
Ram	1	3	2
Ramu	1	0	1
Ramya	3	3	0
Ramy	0	1	1
Rambo	2	0	3

Table 3

	Eraser	Pen	Pencil	Diaries	Staplers
Ram	1	0	2	2	1
Ramu	0	1	0	1	0
Ramya	2	2	1	1	0
Ramy	1	1	0	0	0
Rambo	1	2	0	1	1

In this problem, five students bought stationery item from any of the three shops. Five people [student] – five items – three shops. These three types of data are taken two at a time and represented as table. The possible questions will be

Who bought what item in what shop?

Let's take one example.

From which shop did Ram buy the 2 pencils?

To answer this question we have to merge the three tables

How do we do it?

**First observe the conditions**

Ramy did not buy eraser from shop 2

So Ramy bought one eraser from shop 3 and 1 pen from shop 2.

Ramy : 1 eraser (shop 3) and 1 pen (shop 2).

since Rambo did not buy any article from shop 2 he bought 1 stapler from shop 1. Moreover way, since Rambo bought 1 stapler from shop 1, Ram

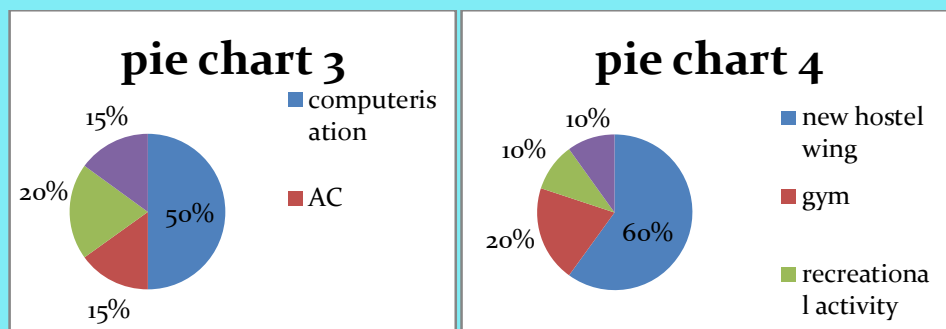
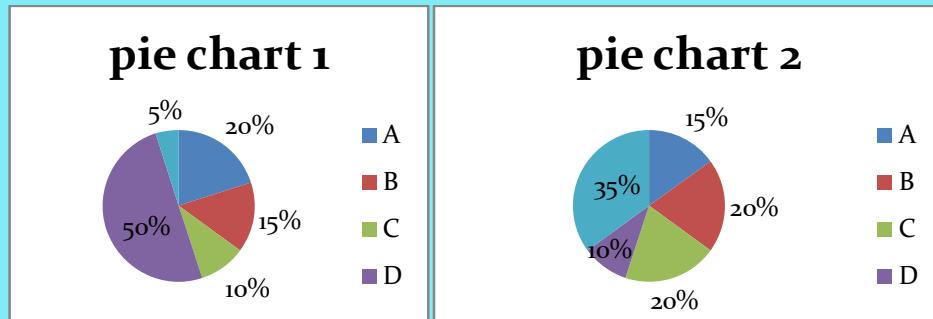
bought 1 stapler from shop 2 . In a similar way one can reason out all the data from the three tables and convert it in to a single table.

	Erasers	Pens	Pencils	diary	Staplers
Ram	1(shop 1)	0	2(shop 3)	2(shop 2)	1(shop 2)
Ramu	0	1(shop 3)	0	1(shop 1)	0
Ramya	2(shop 2)	2(shop 1)	1(shop 1)	1(shop 1)	0
Ramy	1(shop 3)	1(shop 2)	0	0	0
Rambo	1(shop 1)	2(shop 3)	0	1(shop 3)	1(shop 1)

Coming back to the question, the answer can be easily found out from the table. Ram bought both the pencils from shop III.

**Problem 2:**

On the fund raising day, the total amount contributed by five IIM alumni A,B,C,D,E was equal to the total money required for upgrading the library and hostel at IIM . Pie charts 1 and 2 give details of their individual contributions as percentages of the total amount required for upgradation of library and hostel respectively. Pie charts 3 and 4 give the break up of the total expenditure incurred on upgradation of library and hostel respectively.



From pie chart 1 we can infer the contribution of each IIM alumnus in upgrading of library.

Eg. Person A contributed 20 % of total. If upgradation is 100 million, then A's share is 20 million.

From pie chart 2 we can infer the contribution of each IIM alumnus in upgrading the hostel.

Eg. Person A contributed 15 % of total expense. If we consider upgradation costs come upto 100 million , then A's share is 15 million.

In general the total contribution of A toward upgradation is

$$A = 0.2x + 0.15y$$

Where  $x$  and  $y$  are upgradation cost of library and hostel respectively.

Pie charts 3 and 4 represents the total expenditure incurred on upgradation of library and hostel respectively.

In general if these types of many pie charts are given , read through the question and tabulate the necessary values alone in a table.

Now find the contribution of A,B,C,D,E if total upgrading cost library and hostel is 1 million each

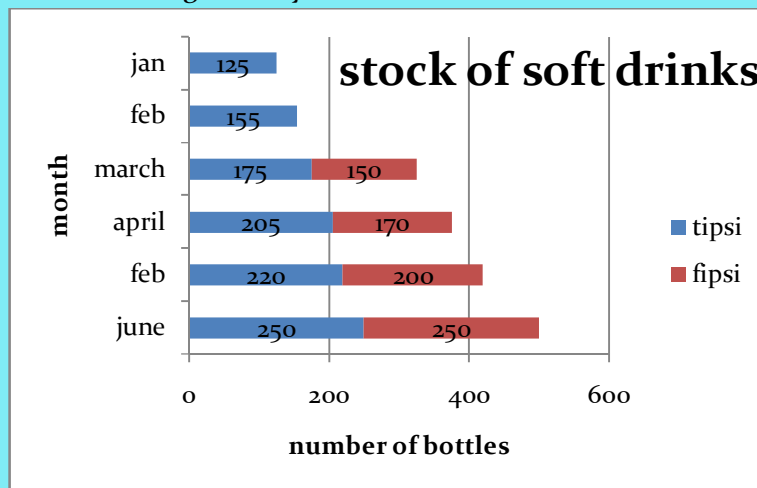
Alumni	Contribution for library	Contribution for hostel
A	200000	150000
B	150000	200000
C	100000	200000
D	500000	100000
E	50000	350000

In some cases, restriction may be imposed on using a particular connector, take note of them while analysing the problem.

In this form of data representation, the information is presented in the form of short passage of random data. So the data presented in a caselet is not obvious by mere observation.

**Problem 3:**

Tipsi and fipsi are two brands of soft drink bottles that are available at the local grocer's shop. The owner Mr. Suri had started stocking these brands in his shop. He started stocking Tipsi in the month of Jan whereas Fipsi in the month of March. He did not have any stock of Tipsi or Fipsi before January. The bar chart given below provides information about the number of standard packs (of 300ml) of each brand being bought by Mr. Suri at the beginning of the corresponding month. He managed to sell only a fraction of the total stock available at the beginning of the month (stock left over from previous month + the new stocks bought in that month) for that brand. Both the brands are sold in standard packs only (consider the nearest integer in any calculation that involves number of packs)



The fraction of stocks of each brand sold in six month period:

Month	Fraction of Tipsi sold	Fraction of Fipsi sold
Jan	0.5	-
Feb	0.6	-
Mar	0.7	0.7

April	0.8	0.9
May	0.9	0.7
June	0.8	0.5

Let's read the graph

The bar chart data are multiplied with table data to get a new table that gives a total picture of the stock bought, sold, remaining.

For instance, In Jan 125 Tipsi was bought. Of that only 0.5 were sold. That's  $125 * 0.5 = 63$ . Similarly for other months these data are calculated.

Earlier stock = total stock of previous month - total sold

Eg . earlier stock of feb =  $125 - 63 = 62$

Month	Tipsi				Fipsi				Total packets sold
	bought	Earlier stock	Total stock	Total sold	bought	Earlier stock	Total stock	Total sold	
Jan	125	0	125	63	0	0	0	0	63
Feb									
Mar									
April									
May									
June									

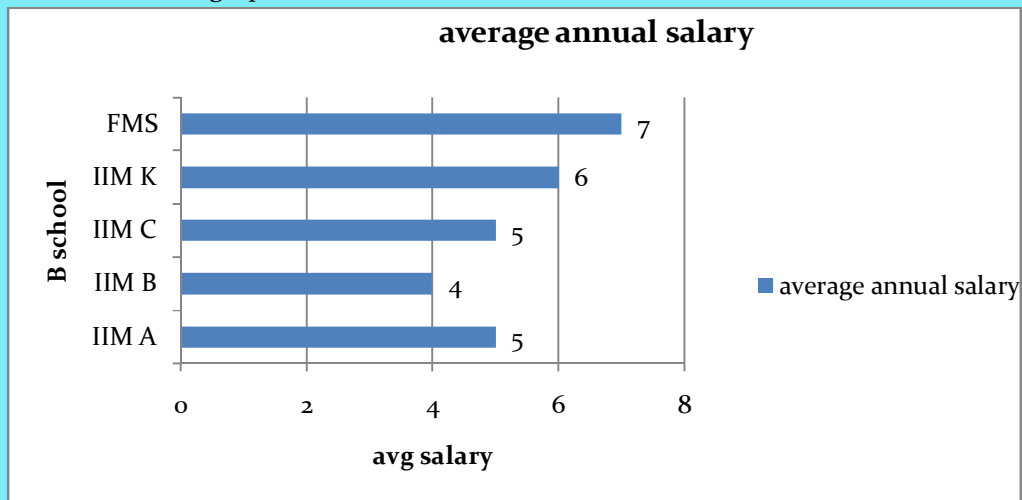
From the above table we can easily find out stocks of Tipsi and Fipsi for the given months. Moreover, comparison of the sold packets of these drinks is easier to do. For eg, if the question is-

In which month was the total stock of tipsi maximum? . the obvious answer is April.

Fill in the remaining data in the table

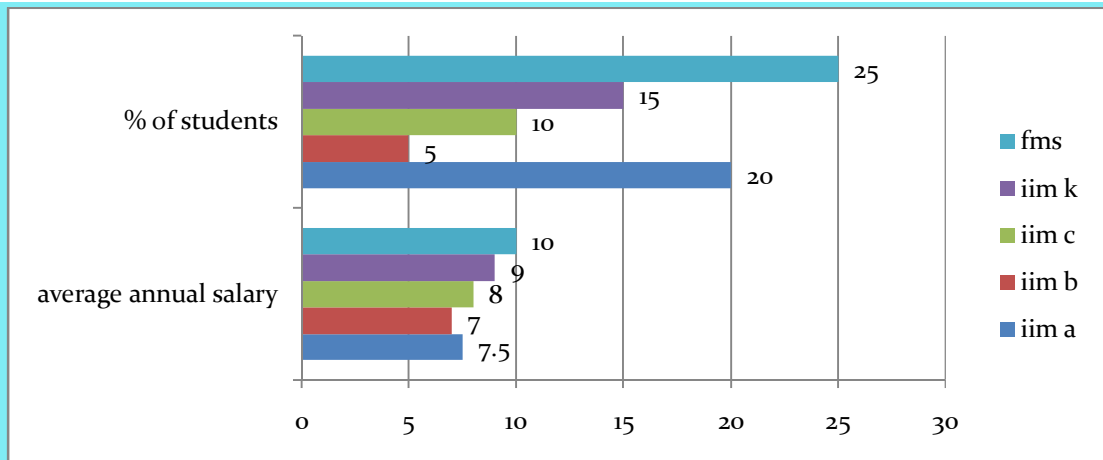
**Problem 4**

The average salary offered to students at five leading B schools is presented in the graph

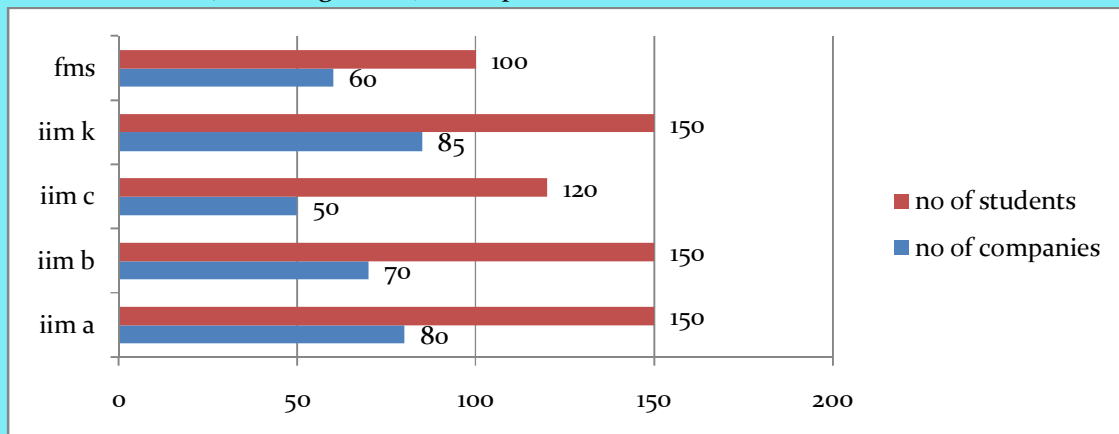


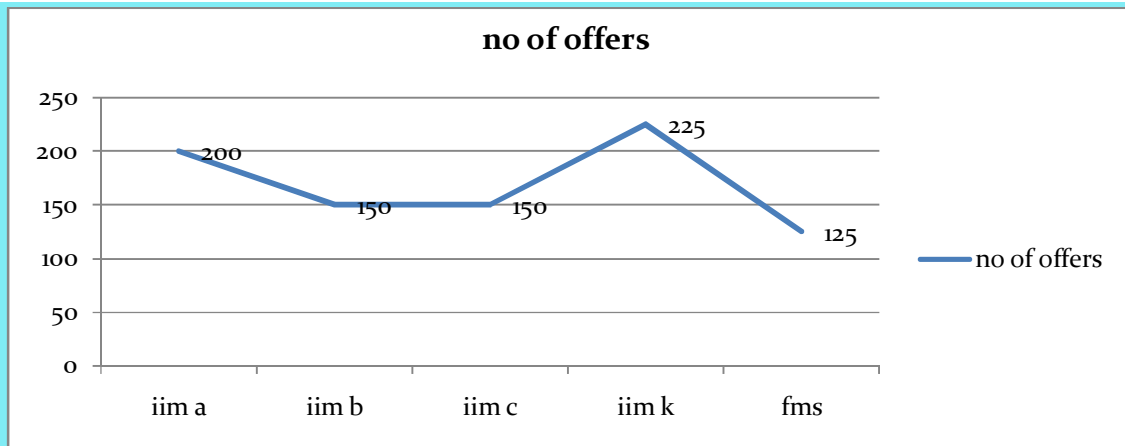
Average annual salary = total salary offered in b school /number of students in b school

The percentage of students getting pre placement offers and average salary is shown below



The number of students, companies visiting the campus, and total offers made (including PPO's) are represented below.





To answer any question, it is necessary to integrate the graphs into one.

B school	Number of companies	Number of students	Number of offers	Offers made per company	Offer per student
IIM A	80	150	200	2.5	1.33
IIM B					
IIM C					
IIM K					
FMS					

From the above table one can find the ratios and determine any other related data. Complete the above table.

Now a question: What is the average salary offered to IIM A students who did not receive PPO?

Average salary in IIM A is 5 lakhs

Total salary of all students is  $150 * 5 = 750$  lakhs

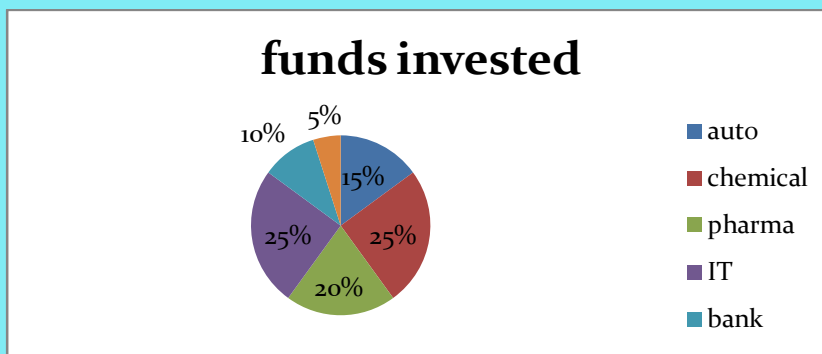
Out of these 150 students, 20 % got pre placement offers . Their avg salary was 7.5 lakhs

So 20% of  $150 * 7.5 = 450$  lakhs

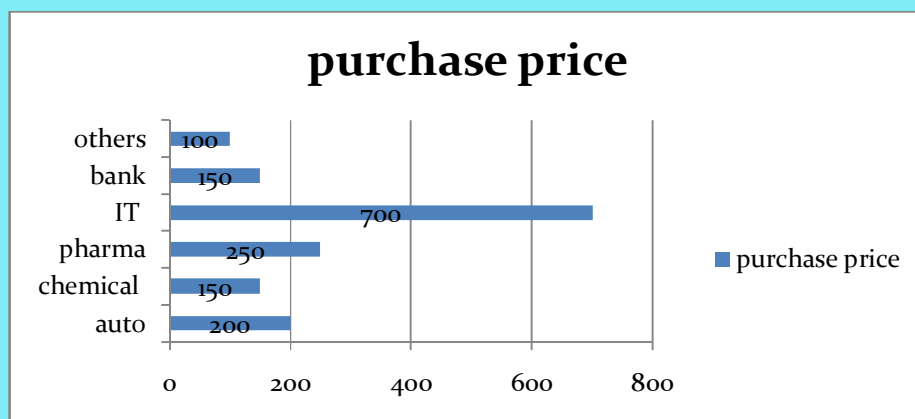
So the required answer is  $(750 - 450)/90 = 3.33$  lakhs

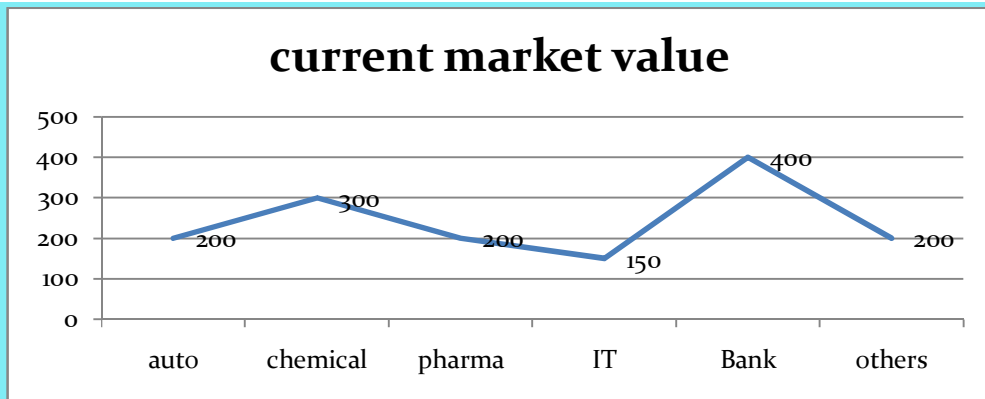
**Problem 5:**

The pie chart below shows split up of funds invested in shares of different sectors.



The price at which shares of respective sectors were purchased and their current market value is represented in the following graphs.





Market capitalisation = number of shares \* current market price

Market appreciation = number of shares \* ( current market price - purchase price)

Conversion of the graphs into readable table

	Value of funds	Purchase price	Current market price	Number of shares	Market capitalisation	Market appreciation
Auto	150000000	200	400	750000	300000000	150000000
Chemical						
Pharma						
IT						
Bank						
Others						

Many data can be deducted and questions answered from such simplified table.

*Problem 6:*

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The caselet below presents data on the World Cup Hockey Tournament held this year:

Ten different countries participated in this tournament. The ten teams were divided into two groups, with each group having 5 teams. Group A comprised A,B,C,D and E. Group B comprised F,G,H,I and J.

- For any team, a match results in a win (W), or a draw (D) or a loss (L). A team was awarded 5 points for a win and 2 points for a draw. A loss did not yield any points.
- The total points of a team are the sum of the points scored in all the matches.
- In the first round of matches, each team played with every other team in its group exactly once. The top two teams (on the basis of total points) from both the groups progressed to the second round.
- In the second round, each team played with the other three teams only once. The team with the highest total points in the second round was declared the winner, while the second highest was declared the runner-up in the tournament.

The following data is available about the performance of the various teams in the tournament:

- i) In round 1, the five teams in Group A secured 17, 12, 11, 7 and 0 points (in some order).
- ii) In round 1, the five teams in Group B secured 20, 9, 7, 6 and 4 points (in some order).
- iii) In round 2, the teams that secured 20, 17, 12 and 9 points in the first round secured 12, 2, 6 and 7 points respectively.
- iv) The win-draw-loss summary in the two rounds is given below:

Round 1

Group A			
Team	W	D	L
A		3	
B			
C		1	
D			1
E			2
Group B			
Team	W	D	L
F		3	
G			0
H			2
I	0		
J			

Round 2

Team	W	D	L
Team 1	0		
Team 2			
Team 3			1
Team 4		3	

Reading the data and the table

In this type of problem, firstly the missing data should be filled in accordance with the conditions.

The number of matches played by each team in first round is 4 .

Group A teams secured 17, 12, 11, 7 and 0 points

$$17 = 3 \times 5 + 1 \times 2$$

$$12 = 2 \times 5 + 1 \times 2 + 1 \times 0$$

$$11 = 1 \times 5 + 3 \times 2$$

$$7 = 1 \times 5 + 1 \times 2 + 2 \times 0$$

$$0 = 0 \times 4$$

Group A				TOTAL POINTS
Team	W	D	L	
A	1	3	0	11
B	0	0	4	0
C	3	1	0	17
D	2	1	1	12
E	1	1	2	7

Similarly for group B we can compute the score status. Fill the table

Group B				TOTAL POINTS
Team	W	D	L	
F				
G				
H				
I				
J				

Round 2

Team	W	D	L
Team 1	0		

Team 2			
Team 3			1
Team 4		3	

Solutions for problems 2 - 6

2)

Alumni	Contribution for library	Contribution for hostel
A	200000	150000
B	150000	200000
C	100000	200000
D	500000	100000
E	50000	350000

3)

Month	Tipsi				Fipsi				Total packets sold
	bought	Earlier stock	Total stock	Total sold	bought	Earlier stock	Total stock	Total sold	
Jan	125	0	125	63	0	0	0	0	63
Feb	155	62	217	130	0	0	0	0	130
Mar	175	87	262	183	150	0	150	105	288
April	205	79	284	227	170	45	215	194	421
May	220	57	277	248	200	21	221	155	404
June	250	28	278	222	250	66	316	158	380

4)

B school	Number of companies	Number of students	Number of offer	Offer per company	Offer per student
IIM A	80	150	200	2.5	1.33

IIM B	70	150	150	2.14	1
IIM C	50	120	150	3	1.25
IIM K	90	150	225	2.5	1.5
FMS	60	100	125	2.08	1.25

5)

	Value of funds	Purchase price	Current market price	Number of shares	Market capitalisation	Market appreciation
Auto	150000000	200	400	750000	300000000	150000000
Chemical	250000000	150	450	1666666.66	750000000	500000000
Pharma	200000000	250	500	800000	400000000	200000000
IT	250000000	700	1050	357142.85	375000000	125000000
Bank	100000000	150	600	666666.66	400000000	300000000
Others	500000000	50	100	1000000	100000000	500000000

6)

Group B				TOTAL POINTS
Team	W	D	L	
F	0	3	1	6
G	4	0	0	20
H	1	1	2	7
I	0	2	2	4
J	1	2	1	9

Round 2

Team	W	D	L	TOTAL POINTS
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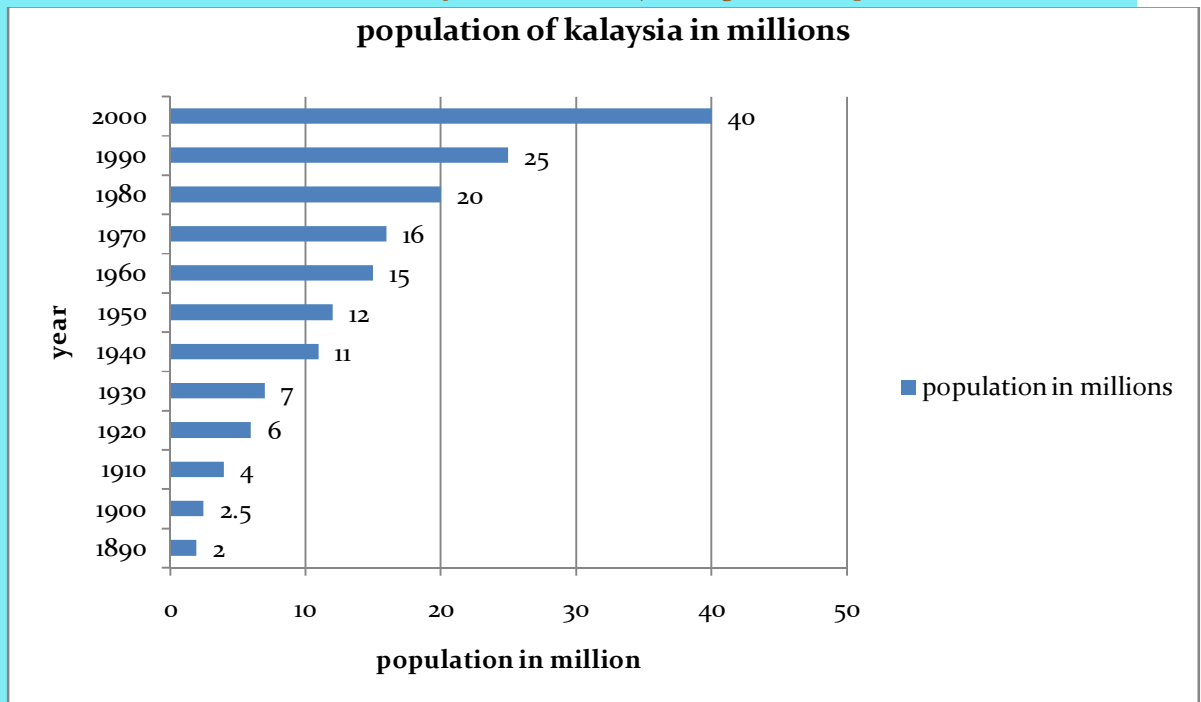
C	0	1	3	2
G	3	0	0	12
J	1	1	1	7
D	0	3	0	6

G is a winner and J is runner up.

Practice problem -2 :

Problem 1:

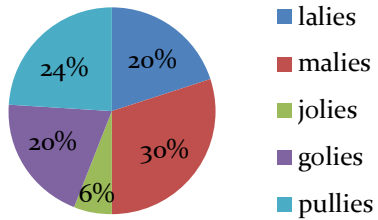
Given below are the statistics of the great country of kalaysia. kalaysia has five different races namely lalies, malies , jolies, golies and pullies.



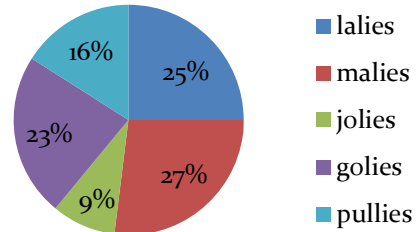
Race distribution in 1990

Race distribution in 2000

**race distribution in 1990**



**race distribution in 2000**

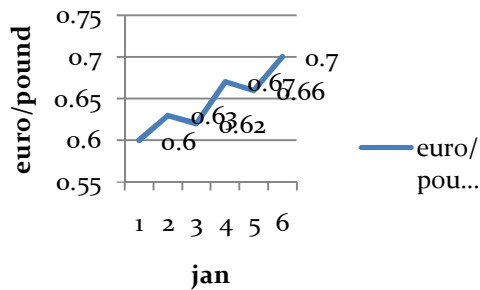


Draw a data table giving the info about population of each race in 1990 and 2000

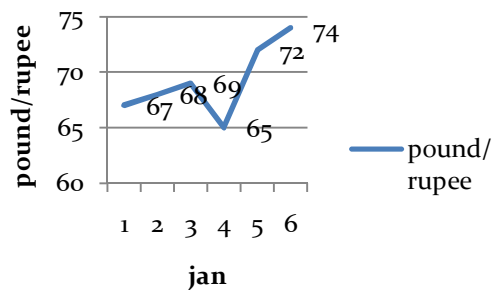
**Problem2 :**

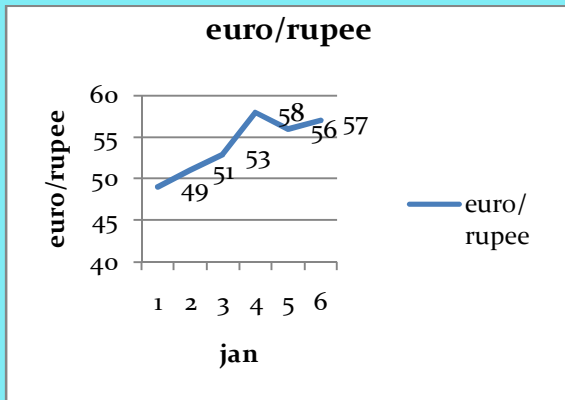
Refer the line graphs and fill in the data table.

**euro/pound**



**pound/rupee**





What is the value of 1 pound in the mentioned six days in terms of euros and rupees?

Date	Euro	Rupee
Jan 1		
Jan 2		
Jan 3		
Jan 4		
Jan 5		
Jan 6		

**Problem3 :**

The Euro Cup Football match held in the year 2008 was conducted as follows:

- Ten different countries participated in this tournament. These teams were divided into two groups, with each group having 5 teams. Group A comprised Spain, Germany, Turkey, Netherlands and Russia. Group B comprised Portugal, Croatia, Swiss, France and Italy.

- For any team, a match results in a win (W), or a draw (D) or a loss (L). A team was awarded 3 points for a win and 1 point for a draw. A loss did not yield any points.
- The total points of a team are the sum of the points scored in all the matches.
- In the first round of matches, each team played with every other team in its group exactly once. The top two teams (on the basis of total points) from both the groups progressed to the second round.
- In the second round, each team played with the other three teams only once. The team with the highest total points in the second round was declared the winner, while the second highest was declared the runner-up in the tournament.

The following data is available about the performance of the various teams in the tournament:

1. In round 1, the five teams in Group A secured 12, 7, 6, 1 and 0 points (in some order).
2. In round 1, the five teams in Group B secured 10, 9, 4, 3 and 2 points (in some order).
3. In round 2, the teams that secured 12, 7, 10 and 9 points in the first round secured 7, 0, 6 and 4 points respectively.
4. The win-draw-loss summary in the two rounds is given below:

Round 1

Group A			
Team	W	D	L
Spain			0
Germany	2		
Turkey		1	
Netherlands			3
Russia		0	

Group B			
Team	W	D	L
Portugal		2	
Croatia		0	
Swiss			2
France			1
Italy	3		

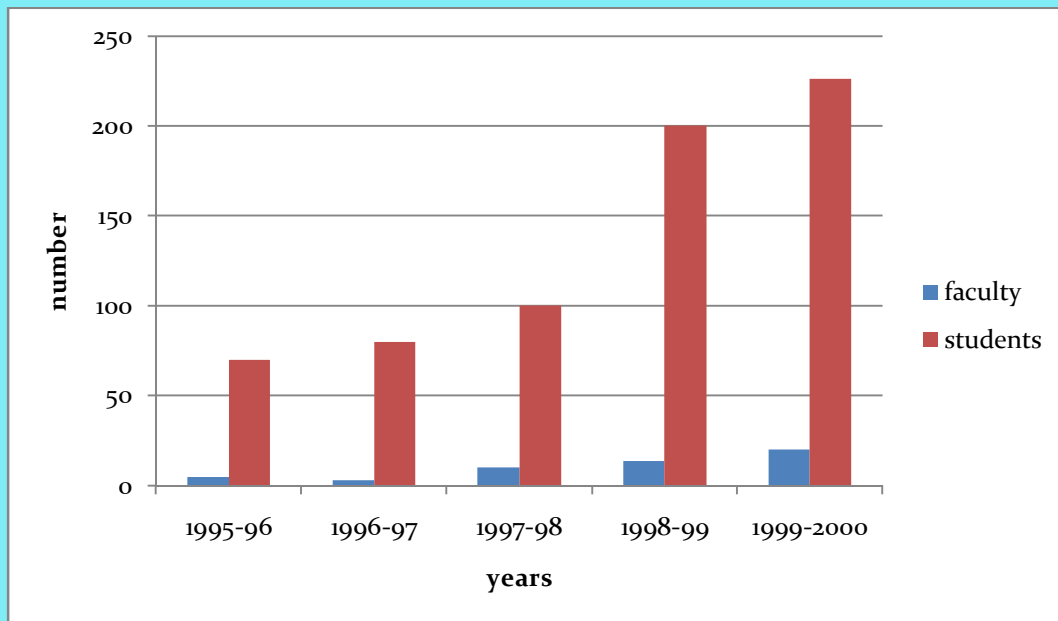
Round 2

Team	W	D	L
Team 1	0		
Team 2			0
Team 3			1
Team 4		1	

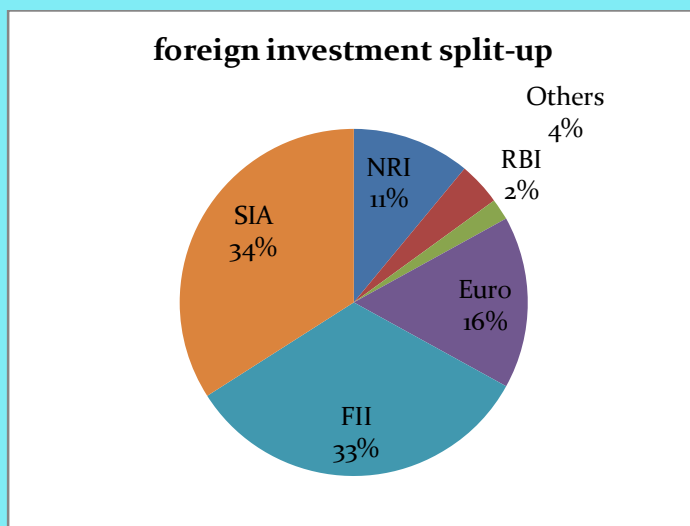
Who is the winner and runner up of the tournament?

Solutions for practice problems -1

1.



2.



Sno.	Parameter	Contribution (in million)
1	SIA	1940.4
2	NRI	627.66
3	FII	1882.98
4	Euro equities	912.96
5	RBI	114.12
6	Other	228.24

3.

Year	Export(in crores)	Import(in crores)
1995-96	6000	3000
1996-97	5800	4900
1997-98	7000	6000
1998-99	8000	5500

Solutions for practice problems -2

1.

Race	Year	
	1990(million)	2000(million)
Lalies	5	10
Malies	7.5	10.8
Jolies	1.5	3.6
Golies	5	9.2
Pullies	6	6.4

2.

Date	Euro	Rupee
Jan 1	1.67	67
Jan 2	1.587	68
Jan 3	1.612	65
Jan 4	1.492	69
Jan 5	1.515	72
Jan 6	1.428	74

3.

Round 1

Group A			
Team	W	D	L
Spain	4	0	0
Germany	2	0	2
Turkey	2	1	1
Netherlands	0	1	3
Russia	0	0	4

Group B			
Team	W	D	L
Portugal	0	2	2
Croatia	1	0	3
Swiss	1	1	2
France	3	0	1
Italy	3	1	0

Round 2

Team	W	D	L
Team 1	0	0	3
Team 2	2	1	0
Team 3	2	0	1
Team 4	1	1	1

Spain is the winner and Italy is the runner up

*Watch out for the next chapter in the DI series  
"ScoT approaches to DI"*