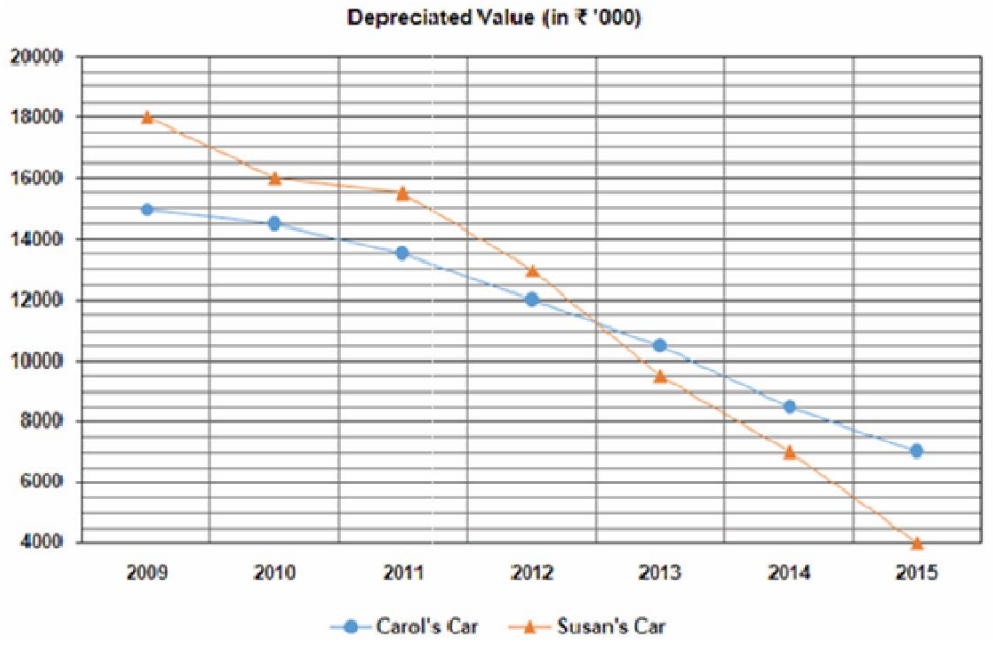
Set-1

The insurance premium charged by a certain insurance company for a vehicle in any year is calculated on the basis of the depreciated value (in Rs.) of the vehicle at the beginning of that year and th e age (in completed years) of the owner of the car at the beginning of the year using the following formula:

$$\text{Insurance Premium} = \frac{\textit{Depreciated Value} + (\textit{Age} \times 100000)}{250}$$

The line graph below presents the depreciated value (in Rs. '000) of the cars owned by Carol and Susan at the beginning of each year from 2009 to 2015. Carol was born on July 23rd, 1982 and Susan was born on April 15th, 1974. Both Carol and Susan paid the insurance premium every year from 2009 to 2015.



Q.1What is the insurance premium (in Rs.) for Carol's car in 2012?(TITA)

Q.2What is the highest insurance premium paid by either Carol or Susan in any of the given years?

a) Rs.85600

b) Rs.74100

c) Rs.72000

d) Rs.70400

Q.3 What is the approximate average annual insurance premium paid by Susan during the given period?

a) Rs.65223

b) Rs.63445

c) Rs.64256

d) Rs.62229

Q.4 If in 2016, the insurance premium paid by Carol is the same as that paid by Susan, what is the difference (in Rs. lakhs) between the depreciated value of Carol's car in 2016 and that of Susan's car in 2016?(TITA)

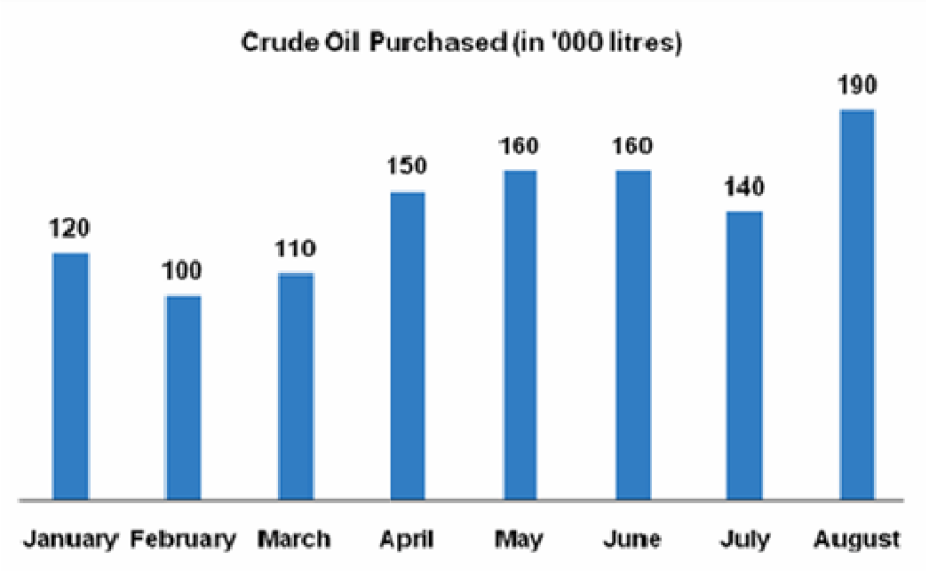
Set-2

Harsha, the owner of a small oil refinery, purchases crude oil and processes it in his refinery. From one litre of crude oil, the refinery yields 500 ml of Gasoline, 200 ml of Fuel Oil, 75 ml of Jet Fuel, 150 ml of Kerosene and 125 ml of Lubricants. Because of the difference in densities, one litre of crude oil provides an output of 1.05 litres in various forms. This difference of 50 ml is called Refinery Gain.

Harsha always purchases the crude oil at the beginning of every month, processes the entire quantity purchased during the month and sells the entire output of the month by the end of the month. The cost of processing one litre of Crude Oil in Harsha's refinery

is Rs.12. The table below provides the price per litre at which he purchased Crude oil every month and the price at which he sold Gasoline, Fuel Oil, Jet Fuel, Kerosene and Lubricants during each month from January to August. The bar-chart below the table provides the total quantity of Crude Oil purchased by Harsha in each month during the same period:

Month	Price per Liter (Rs./liter)					
	Crude Oil	Gasoline	Fuel Oil	Jet Fuel	Kerosene	Lubricants
January	26	52	110	24	32	64
February	29	51	124	20	30	60
March	31	48	125	32	32	60
April	32	46	114	16	36	64
May	29	51	113	20	40	72
June	24	53	100	24	28	64
July	21	54	120	20	32	60
August	26	50	104	24	36	56



Profit = Sum of the revenues obtained from selling the output– Cost of Crude Oil – Processing Cost

Q5.
In which month did Harsha make the maximum total profit?

a) August

b) July

c) June

d) May

Q.6 For how many months was the profit per liter of crude oil greater than the price of crude oil in that month?

a) 0

b) 1

c) 2

d) More than 2

What is the total profit made by Harsha in the month of April?

a) Rs.24.6 lakh

b) Rs 25.83 lakh

c) Rs 23.5 lakh

d) Rs 26.12 lakh

What is the total Refinery Gain (in litres) of Harsha's refinery from January to August?(**TITA**)

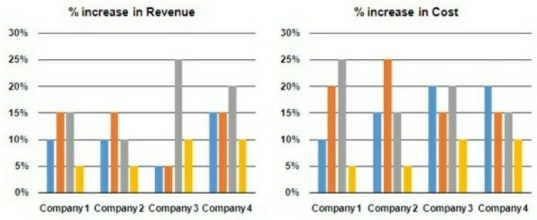
Set-3

Hari, a management consultant, was studying the revenues and costs of four companies – Image, Outline, Picture and Sketch. He calculated the percentage increase in the costs and revenues of the four companies in each year, from 2012 to 2015, as compared to the previous year. He prepared two bar graphs (given below),
the first showing the year-on-year percentage increase in revenue of each company for the given period and the second, the year-on-year percentage increase in cost. However, in the bar graphs, instead of using the names of the companies, Hari labelled them as Company 1, Company 2, Company 3 and Company 4, in no particular order.

The table given below shows the revenues (in Rs.mn) and costs (in Rs.mn) of the four companies for the year
2011.

Further, it is also known that no company incurred a loss during any of the years in the given period.

Company	2011	
	Revenues	Cost
Image	160	110
Outline	250	210
Picture	140	130
Sketch	220	190



Q.9 Which of the following companies is represented in the bar graph as Company 1?
a) Sketch
b) Outline
c) Image
d) Picture

Q.10 What is the approximate profit made by Outline in 2014?
a) Rs.17.18 mn
b) Rs.18.11 mn
c) Rs.63.48 mn
d) Rs.0.72 mn

Q11. Which company made the highest profit in 2015?
a) Picture
b) Outline
c) Image
d) Sketch

Q12 .In how many years from 2011 to 2015 did Picture make a profit of more than Rs.10 mn?(TITA)

Set-4

Ramu, a data analyst, visited a vegetable market and purchased eight different types of vegetables. After returning home, he weighed each type of vegetable that he purchased and realized that for each type of
vegetable, the weight of the vegetables which he paid for was not the same as the actual weight of the vegetables that he got. Being an analyst, he could not help but calculate various parameters for each type of
vegetable that he purchased as mentioned below:
The Total Amount (in Rs.) paid by him for purchasing each type of vegetable.

The Effective Price (in Rs./kg) of each type of vegetable – which is the total amount that he paid for those vegetables divided by the actual weight of the vegetables that he got.

Monetary Loss (in Rs.) for each type of vegetable – which is the difference between the total amount that he paid for those vegetables and the total amount that he should have paid (at the same price per kg) for the actual weight of the vegetables that he got. The following table presents these parameters for each type of vegetable that he purchased:

Vegetable	Total Amount paid	Effective Price	Monetary Loss
Onion	100.00	22.22	10.00
Tomato	64.00	20.00	12.80
Capsicum	56.00	44.80	21.00
Beans	87.50	43.75	17.50
Bitter gourd	105.00	26.25	21.00
Bottle gourd	20.00	8.00	7.50
Carrot	144.00	60.00	28.80
Potato	252.00	40.00	25.20

Q13.For which type of vegetable was the difference between the weight that he paid for and the actual weight he got the highest?
a) Bitter Gourd
b) Carrot
c) Potato
d) Bottle Gourd

Q14. What is the price (in Rs.) per kg that he paid for buying Capsicum?

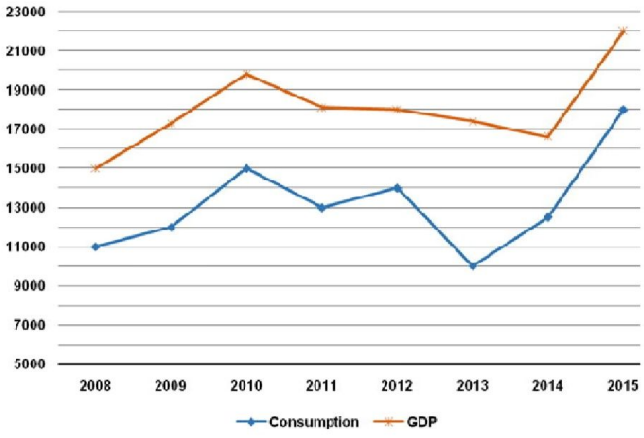
Q.15. What is the sum of the actual weights of all the types of vegetables that he

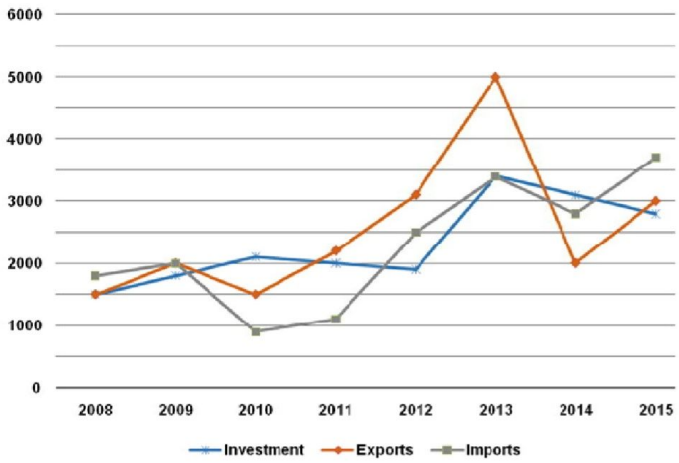
purchased?
a) 26.5 kg
b) 26.15 kg
c) 27.25 kg
d) 29.45 kg

Q16. If Forgone Weight is defined as the difference between the actual weight of the vegetables that he purchased and the weight of the vegetables that he paid for, what is the sum of the Forgone Weights for all the types of vegetables?
a) 6 kg
b) 6.15 kg
c) 6.35 kg
d) 6.45 kg

Set-5

The GDP of a country is calculated using the following formula:
GDP = C + I + G + X – M
where C represents the Consumption, I represents the Investments, G represents the Government Spending, X represents Exports and M represents Imports.
The following line charts present the values (in $ bn) of C, I, X, M and the GDP of a country for each year from 2008 to 2015





Q.17 In which year was the Government Spending as a percentage of GDP the lowest?
a) 2015
b) 2014
c) 2012
d) 2010

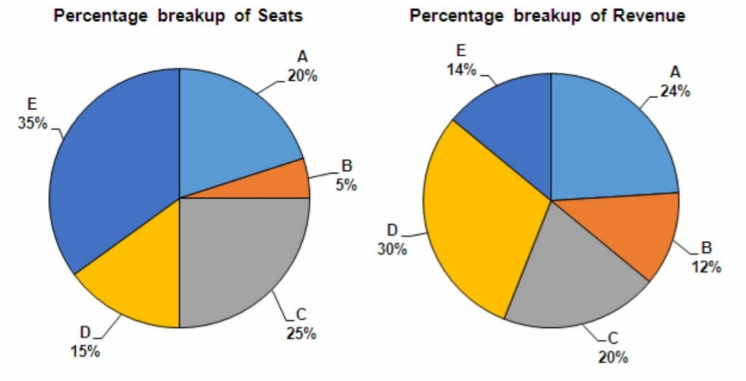
Q.18 In how many of the given years were the Exports less than Government Spending?
a) 2
b) 3
c) 4
d) 5

Q19. The Government Spending in any year as a percentage of the Consumption in that year was at most (approximately)
a) 29%.
b) 25%.
c) 21%.
d) 20%.

Q20.The highest Government Spending in any year was approximately
a) $4500 bn.
b) $4000 bn.
c) $3500 bn.
d) $300 bn.

Set-6

In a theatre, there are five different types of seats – A, B, C, D and E. The price per seat of all the seats of a particular type is the same. However, the price per seat is different for different types of seats.
The first pie chart below provides the percentage breakup of the number of seats in the theatre by the type of seat. The second pie chart provides a similar breakup of the revenue that the theatre could have earned for one show if all the seats in the theatre were sold.



Q.21 If, on a particular day, the revenue from each type of seat was the same and all the seats of one particular type were sold out, which of the following type of seat was sold out?
a) B
b) A
c)C
d)E

Q.22 If, on a particular day, the revenue from each type of seat was the same and the price of a seat of type C is Rs.80, what is the minimum number of seats sold on that day?(TITA)

Q23.If, on a particular day, at least 60% of the seats of each type were filled and the revenue from n types of seats were the same, what is the maximum possible value of n?
a) 5
b) 4
c) 3
d) 2

Q24.If, on a particular day, at least p% of the seats of each type were filled and the revenue from four different types of seats were the same, what is the maximum possible value of p?(TITA)