Data Sufficiency

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Anatomy of a Data Sufficiency question:

While the genre of Data Sufficiency is unique, the structure is not – all Data Sufficiency questions are structured exactly the same, with three key elements:

Consider this example to see what a Data Sufficiency question will look like:

QUESTION STEM

By what percent was the price of a certain candy bar increased?

STATEMENTS

The price of the candy bar was increased by 5 cents.

The price of the candy bar after the increase was 45 cents

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ANSWER CHOICES:

- Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- EACH statement ALONE is sufficient.
- BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- Statements (1) and (2) TOGETHER are NOT sufficient.

✓ If you're relatively new to Data Sufficiency, the most striking feature of this question is likely the answer choices – they're not numbers that might answer the questions, they're more logical descriptions of when you might be able to answer the question.

✓ In this you just need to check that are we able to reach out to an answer. From both the statements answer might be different.

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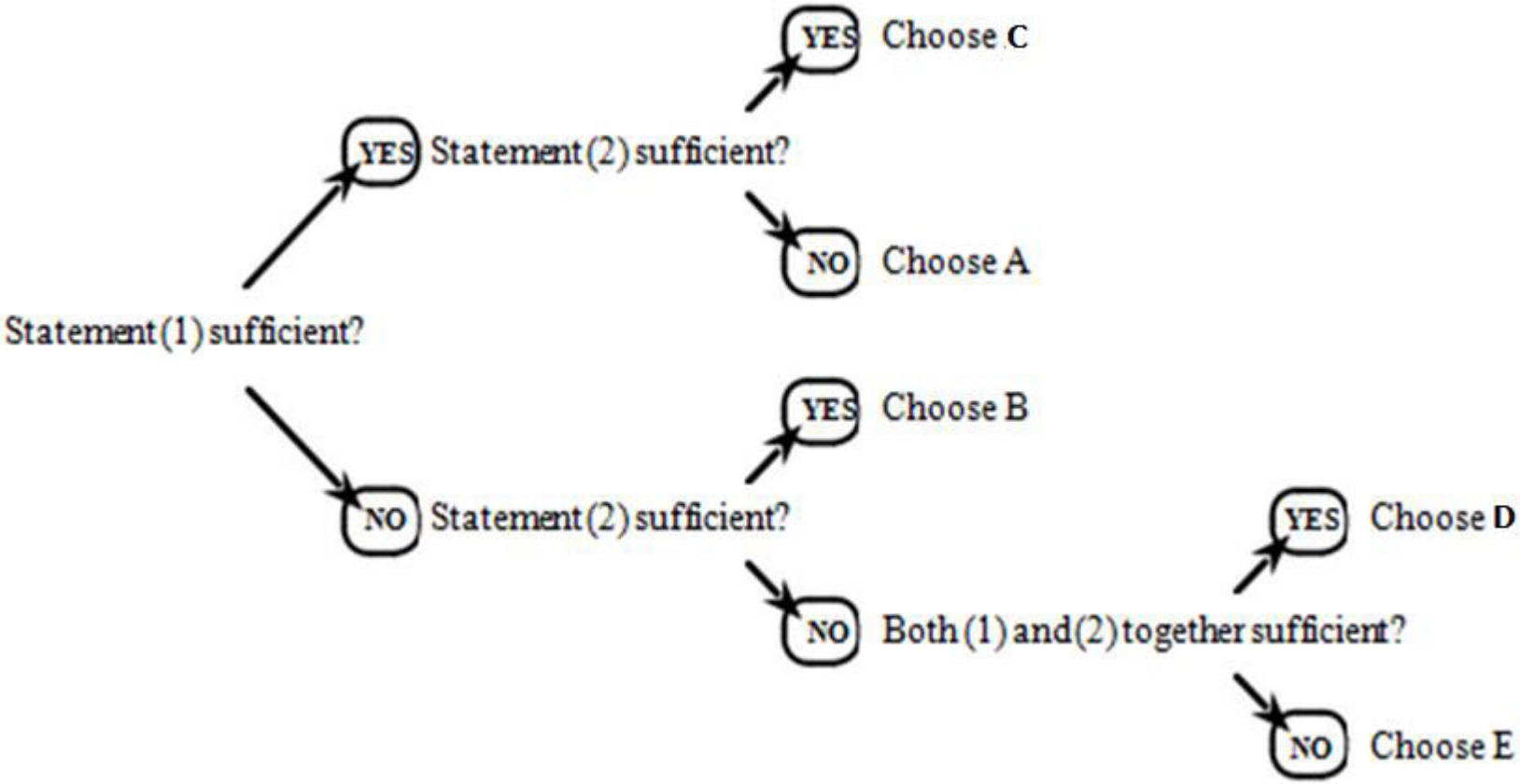
Data Sufficiency Decision Tree:

Assess each statement to determine whether it is sufficient or not, and this tree will lead you to the correct answer:



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PRACTICE QUESTIONS:

Each problem consists of a question and two statements, labeled (I) and (II), in which certain data are given. You have to decide whether the data given in the statements are sufficient for answering the question.

Mark,

A. If statement (i) ALONE is sufficient, but statement (ii) alone is not sufficient to answer the question asked.

B. If statement (ii) ALONE is sufficient, but statement (i) alone is not sufficient to answer the question asked.

C. If EACH statement ALONE is sufficient to answer the questions asked.

D. If BOTH statements (i) and (ii) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

E. If statements (i) and (ii) TOGETHER are NOT sufficient to answer the question asked and additional data specific to the problem are needed.

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1. Five persons are to be seated in a round table conference, who will be seated between Ram and Gita?

I. Ram will sit on the right of Vinay and on the left of Kamal.

II. There will be two persons seated between Vinay and Kamal.

2. When is the next bus scheduled for Mumbai from Delhi?

I. Every 30 minutes a bus is scheduled for Mumbai from Delhi. The return bus leaves Mumbai from Delhi every 45 minutes.

II. It is 4.45pm now .15 minutes ago one bus has left for Mumbai as per the schedule whereas the bus from Mumbai has arrived about 30minutes ago

3. Among four friends P,Q,R and S, who has scored the highest runs in the cricket match?

I. P took more wickets than S but scored less runs than R.

II. Q scored more runs than P but took less wickets than S and R.

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4. Among five friends P,Q,R,S and T, who ranks 3rd in terms of salary obtained by them?

I. T's salary is more than P and Q but not more than S.

II. R's salary is the lowest among them.

5. How long does it take to reach city Y from city X?

I. Sangeeta was scheduled to leave the city X at 17.15 hours but got late by 45minutes and reached city Y at 16.15 hours the next day.

II. Sangeeta reached the bus stand of city X at 14.25 hours and got the bus after

waiting for 35 minutes. She reached city Y at 3.15 hours the next day.

6. Among P, K, D and R, who could be the son of M?

I. P and K are sisters

II. D is the mother of K and wife of M.

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7. Who among N, F, P, J and D is youngest?

I. P and J are younger than N and D.

II. F is younger than N, D and P but older than J.

8. Who among T, R and S is to the East of P?

I. R, who is to the West of P, is not as near to S as P, S is in the farthest East.

II. P is not as far away from S and T

9. What is K's rank from the bottom in a class of thirty students?

I. M's position is 3rd from the top and there are five students between M and K.

II. P's position is 4th from the bottom and there are 7th students between P and K.

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10. Who is to the immediate right of Mohan when Mohan, Salil, Bhusan, Suresh and Jayesh are sitting around a circle facing at the centre?

I.Salil is 3rd to the left of Mohan.

II. Bhusan is between Salil and Jayesh.

11. What is the rate of interest p.a on an amount of Rs. 12000 deposited in a bank?

I. The difference between the simple interest and the compound interest is Rs 172.8.

II. The simple interest for two years is Rs. 2880.

12. What is the profit earned by selling the laptop for Rs 26,250?

I. The cost price of five such laptops is equal to selling price of 4 such laptops.

II. 25% of the profit is earned by selling each laptop.

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13. How many women can complete a piece of work in 15 days?

I. If 12 women can complete the same piece of work in 20 days.

II. If 10 men can complete the same piece of work in 12 days.

14. What is the three digit number?

I. The three digit number is an exact multiple of 13.

II. The first and the third digit are 7.

15. What is the age of C in a group of A, B, C, D and E whose average is 45 years?

I. Average of the ages of A and B is 53.

II. Average of the ages of D and E is 47.

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16. In a library 10% of the books are added every year, what was the number of books that the library had in 1994?

I. During 1996, 10,000 books were added

II. During 1995, the library had 1,00,000 books

17. What is the difference in the ages of P and K?

I. P is 20 years older than M

II. M is 2 years younger than Z

18. D is the sister of C. how is D related to A?

I. A is the sister of B

II. B is the brother of C

19. A, B,C,D and E are sitting in a row. What is the position of B from the left end?

I. A is sitting at one end second right of D who is the immediate neighbor of C and B

II. E is to the immediate left of B.

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20. How INDIA will be coded?

I. If ALIVE is coded as LAIEV

II. If JAPAN is coded as AJPNA

21. What will come in place of c in the series a,b,c,d,e?

I. a,b,c,d,e are five consecutive even numbers

II. common difference between two consecutive numbers is 2 and a is the second smallest natural number

22. Who among A,B,C,D and E is the smallest?

I. B is taller than E and D is taller than A but smaller than E.

II. D is not the tallest and C is not the smallest

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23. X borrowed Rs. 1000 from Y on SI. What is the rate per annum?

I. After 4yrs, X paid Rs. 100 as interest.

II. After 4yrs, X paid Rs. 1100 to settle the loan.

24. What is the total salary of Mr. X and his wife at present?

I. Salary of X and his wife together is 20% more than what they earned last month.

II. Last month salary of X was Rs. 600 more than that of his wife.

25. A figure is composed of ten 1- inch cubes. What is the weight?

I. The cubes are arranged in five rows to two each.

II. The cubes have an average weight of 1 ounce each.

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26. Is the average age of the students of a school less than 17 years?

Statement I : The strength of the class VIII is less than 25% of the strength of the school.

Statement II : The average age of the students of class VIII of the school is 18 years and that of the remaining classes is 16 years.

27. Among 20 retired persons, is the number of persons, who are having at least 20 years of service, less than 8?

Statement I : Exactly 17 persons joined the service before 2000 and exactly 14 persons retired after 2020.

Statement II : Exactly 14 persons joined the service after 2000 and exactly 6 persons retired before 2020.

28. The lengths of trains A and B are in the ratio 2:3. Which of them takes less time to cross the same platform?

Statement I : The time taken by train A to cross train B when they are moving in opposite directions is half the time taken by it to cross train B, when moving in the same direction.

Statement II : The ratio of the length of train B to that of the platform is 4 : 3.

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QUE	ANS	QUE	ANS	QUE
1 2 3	E D E	17 18 19	E D D	
4 5 6	E C D	20 21 22	C D D	
7 8 9 10	B A C D	23 24	C E	
11 12 13	B C A	25 26	B D	
14 15 16	D D C	27 28	A E	

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Data Interpretation

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Data Interpretation is one of the easy sections of one day competitive Examinations. It is an extension of Mathematical skill and accuracy. Data interpretation is nothing but drawing conclusions and inferences from a comprehensive data presented numerically in tabular form by means of an illustration, viz. Graphs, Pie Chart etc. Thus the act of organizing and interpreting data to get meaningful information is Data Interpretation.

SOME USEFUL TIPS :

1 . Data Interpretation questions are based on information given in tables and graphs. These questions test your ability to interpret the information presented and to select the appropriate data for answering a question.

2 . Get a general picture of the information before reading the question. Read the given titles carefully and try to understand its nature.

3 . Avoid lengthy calculations generally, data interpretation questions do not require to do extensive calculations and computations. Most questions simply require reading the data correctly and carefully and putting them to use directly with common sense.

4 . Breakdown lengthy questions into smaller parts and eliminate impossible choices.

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5 . Use only the information given and your knowledge of everyday facts, such as the number of hours in a day, to answer the questions based on tables and graphs.

6 . Answer the questions asked and not what you think the questions should be.

7 . Be careful while dealing with units.

8 . To make reading easier and to avoid errors observe graphs keeping them straight.

9 . Be prepared to apply basic mathematical rules, principles and formulae. 10. Since one of the major benefits of graphs and tables is that they present data in a form that enables you to readily make comparisons, use this visual attribute of graphs and tables to help you answer the questions. Where possible, use your eyes instead of your computational skills.

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TABLES

• Tables are often used in reports, magazines and newspaper to present a set of numerical facts. They enable the reader to make comparisons and to draw quick conclusions. It is one of the easiest and most accurate ways of presenting data. They require much closer reading than graphs of charts and hence are difficult and time consuming to interpret. One of the main purposes of tables is to make complicated information easier to understand. The advantage of presenting data in a table is that one can see the information at a glance. While answering questions based on tables, carefully read the table title and the column headings. The title of the table gives you a general idea of the type and often the purpose of the information presented. The column headings tell you the specific kind of information given in that column. Both the table title and the column headings are usually very straight forward.

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GRAPHS

There may be four types of graphs:

1) Circle Graphs: Circle graphs are used to show how various sectors are in the whole. Circle graphs are sometimes called Pie Charts. Circle graphs usually give the percent that each sector receives In such representation the total quantity in question is distributed over a total angle of 360°. While using circle graphs to find ratios of various sectors, don't find the amounts each sector received and then the ratio of the amounts. Find the ratio of the percentages, which is much quicker.

2)Line Graphs: Line graphs are used to show how a quantity changes continuously. If the line goes up, the quantity is increasing; if the line goes down, the quantity is decreasing; if the line is horizontal, the quantity is not changing.

3) Bar Graphs: Given quantities can be compared by the height or length of a bar graph. A bar graph can have either vertical or horizontal bars. You can compare different quantities or the same quantity at different times. In bar graph the data is discrete. Presentation of data in this form makes evaluation of parameters comparatively very easy.

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4) Cumulative Graphs : You can compare several categories by a graph of the cumulative type. These are usually bar or line graphs where the height of the bar or line is divided up proportionally among different quantities.

CONCEPT TO REVISE:

Average = Sum of observations/Total number of observations

Percentage Increase = (Increase/Original Value)*100

Percentage Decrease = (Decrease/Original Value)*100

where, Original Value is the value to which increase and decrease has been done or the old value

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Example 1: The table below reports annual statistics related to rice production in selected states of India for a particular year:

State	Total Area (in million hectares)	% of Area Under Rice Cultivation	Production (in million tons)	Population (in millions)
Himachal Pradesh	6	20	1.2	6
Kerala	4	60	4.8	32
Rajasthan	34	20	6.8	56
Bihar	10	60	12	83
Karnataka	19	50	19	53
Haryana	4	80	19.2	21
West Bengal	9	80	21.6	80
Gujarat	20	60	24	51
Punjab	5	80	24	24
Madhya Pradesh	31	40	24.8	60
Tamil Nadu	13	70	27.3	62
Maharashtra	31	50	48	97
Uttar Pradesh	24	70	67.2	166
Andhra Pradesh	28	80	112	76

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1. Which two states account for the highest productivity of rice (tons produced per hectare of rice cultivation)?

(1) Haryana and Punjab
(2) Punjab and Andhra Pradesh
(3) Andhra Pradesh and Haryana
(4) Uttar Pradesh and Haryana

2. How many states have a per capita production of rice (defined as total rice production divided by its population) greater than Gujarat?

(1) 3
(2) 4
(3) 5
(4) 6

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3. An intensive rice producing state is defined as one whose annual rice production per million of population is at least 400,000 tons. How many states are intensive rice producing states?(approx)

(1) 5

(2) 6

(3) 7

(4) 8

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Study the following table and answer the questions given below it.

Production of sugar by six major production units of India in Million Tonnes

MONTH/ PRODUCTION UNIT	A	B	C	D	E	F
APRIL	310	180	169	137	140	120
MAY	318	179	177	162	140	122
JUNE	320	160	188	173	135	130
JULY	326	167	187	180	146	130
AUGUST	327	150	185	178	145	128

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4.In which month the unit B has a contribution of approximately 15% in the total sugar production?

a) August

b) June

c) July

d) April

5.Which of the following units shows continuous increase in production of sugar over months?

a) A

b) B

c) C

d) D

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6.In the case of Unit E, in which of the following pairs of months the production of sugar was equal?

a) April & June
b) June & July
c) July & August
d) April & May

7.In the month of June, how many units have a share of more than 25% of the total production of sugar?

a) one
b) Three
c) Two
d) Four

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8. What was approximate percentage decrease in sugar production of unit B in June as compared to April?

a) 8 %
b) 10%
c) 15%
d) 18%

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The table below gives the production capacity (in thousands units) and the percent utilisation in respect of three products (A,B and C) over five years for an organisation. Study the table carefully and answer the questions that follow.

YEAR	PRODUCT						
	A		B		C		TOTAL CAPACITY (A+B+C)
	CAPACITY	UTILISATION	CAPACITY	UTILISATION	CAPACITY	UTILISATION	
1993	170	70%	28	75%	240	40%	438
1994	200	63%	35	60%	260	40%	495
1995	200	65%	30	80%	270	40%	500
1996	210	60%	40	50%	260	45%	510
1997	225	60%	40	55%	260	50%	525

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9. Approximately, what was the overall utilization for all products taken together for the year 1993?

a) 50%
b) 55%
c) 60%
d) 65%

10. What is the approximate overall growth rate in respect of total capacity for the period shown?

a) 5 %
b) 10%
c) 15%
d) 20%

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11. In which of the following years was the production of product A the maximum for all period shown?

a) 1993
b) 1997
c) 1996
d) 1994

12. What is the average production of product B over the period shown?

a) 21,600
b) 24,200
c) 34,600
d) 28,800

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13. In which of the following years was the production of product C the minimum for the period shown?

a) 1997
b) 1994
c) 1993
d) 1996

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PIE CHART (CIRCULAR GRAPH)

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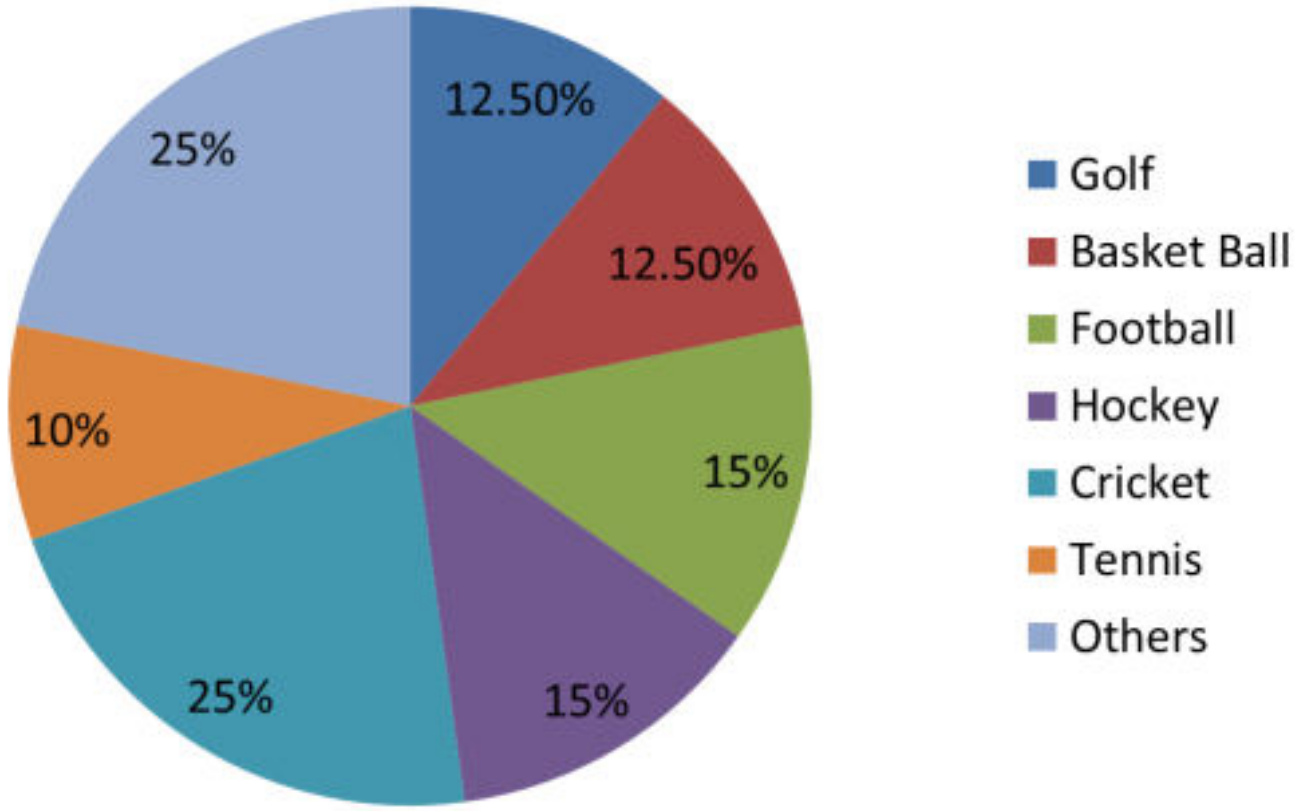
The pie-chart drawn below shows the spending of a country on various sports during a particular year. Study the pie-chart carefully and answer the questions given below it.

PERCENT OF MONEY SPENT ON VARIOUS SPORTS FOR ONE YEAR



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14. If the total amount spent on sports during the year was Rs. 15000000, the amount spent on cricket and hockey together was

a) Rs. 2500000
b) Rs. 3750000
c) Rs. 5000000
d) Rs. 6000000

15. Out of the following, the country spent the same amount on

a) Hockey and Tennis
b) Golf and foot ball
c) Cricket and Foot ball
d) Football and Hockey

16. Pie-chart shows that the most popular game of the country is (on the basis of money spent)

a) Cricket
b) Foot ball
c) Basket ball
d) Hockey

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17. The ratio of the total amount spent on football to that spent on hockey is

a) 1: 15
b) **1: 1**
c) 15:1
d) 3: 20

18. If the total amount spent on sports during the year was Rs. 12000000, how much was spent on basket ball?

a) Rs. 950000
b) Rs. 1000000
c) Rs. 1200000
d) Rs. **1500000**

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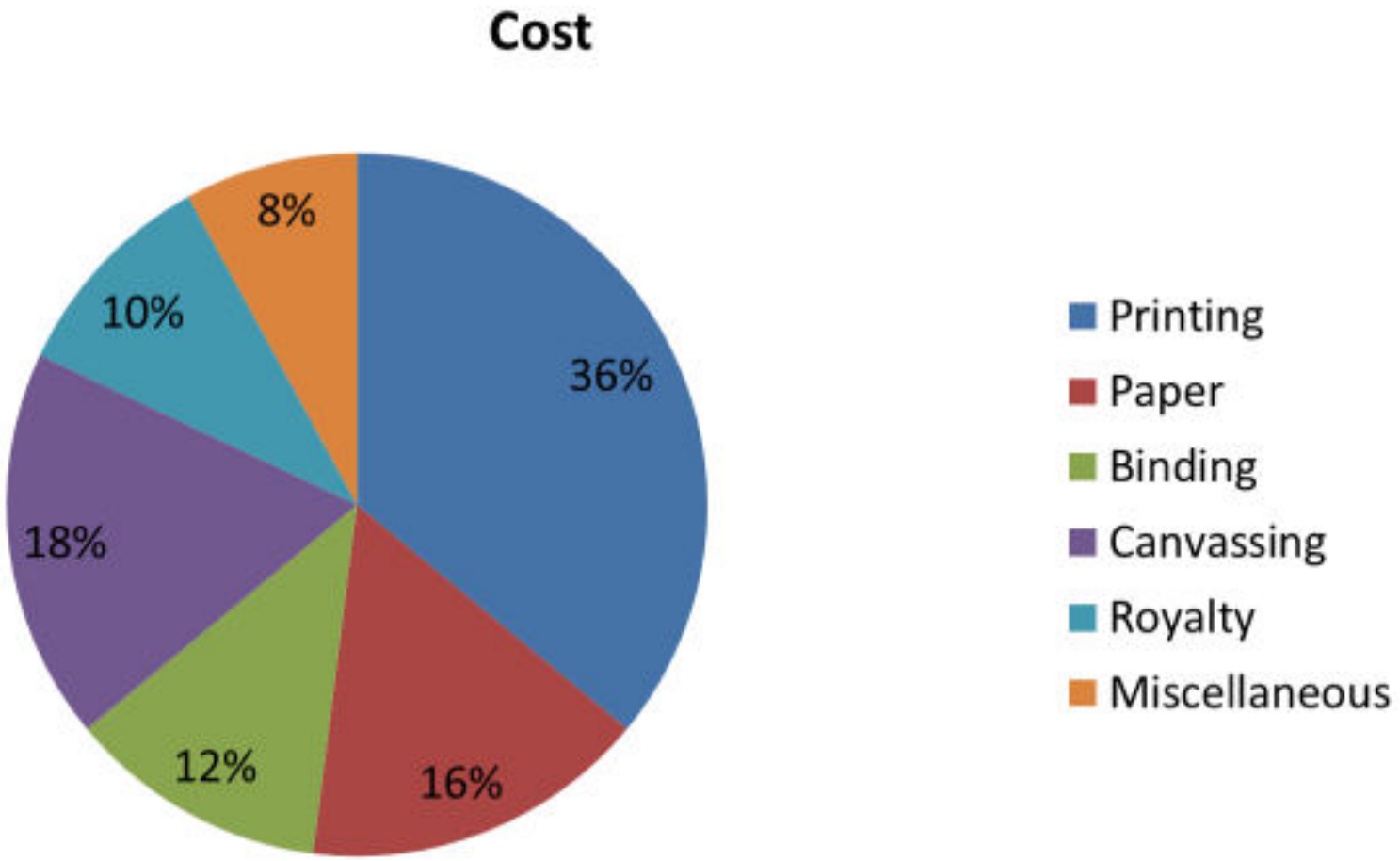
The pie chart given below shows the expenditure incurred in bringing out a book, by a publisher.



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19. What is the central angle showing the cost of paper?

a) 16°
b) 32 °
c) 28.8 °
d) 57.6°

20. If the cost of printing is Rs. 23400, the royalty is:

a) Rs. 6500
b) Rs. 2340
c) Rs. 4680
d) Rs. 7840

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21. If miscellaneous expenditures amount to Rs. 18000, the expenditure on canvassing will be:

a) Rs. 8000
b) Rs. 14400
c) Rs. 46800
d) Rs. 40500

22. Royalty on the book is less than canvassing expenditure by:

a) 8 %
b) 80%
c) 44 (4/9)%
d) None

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LINE GRAPH

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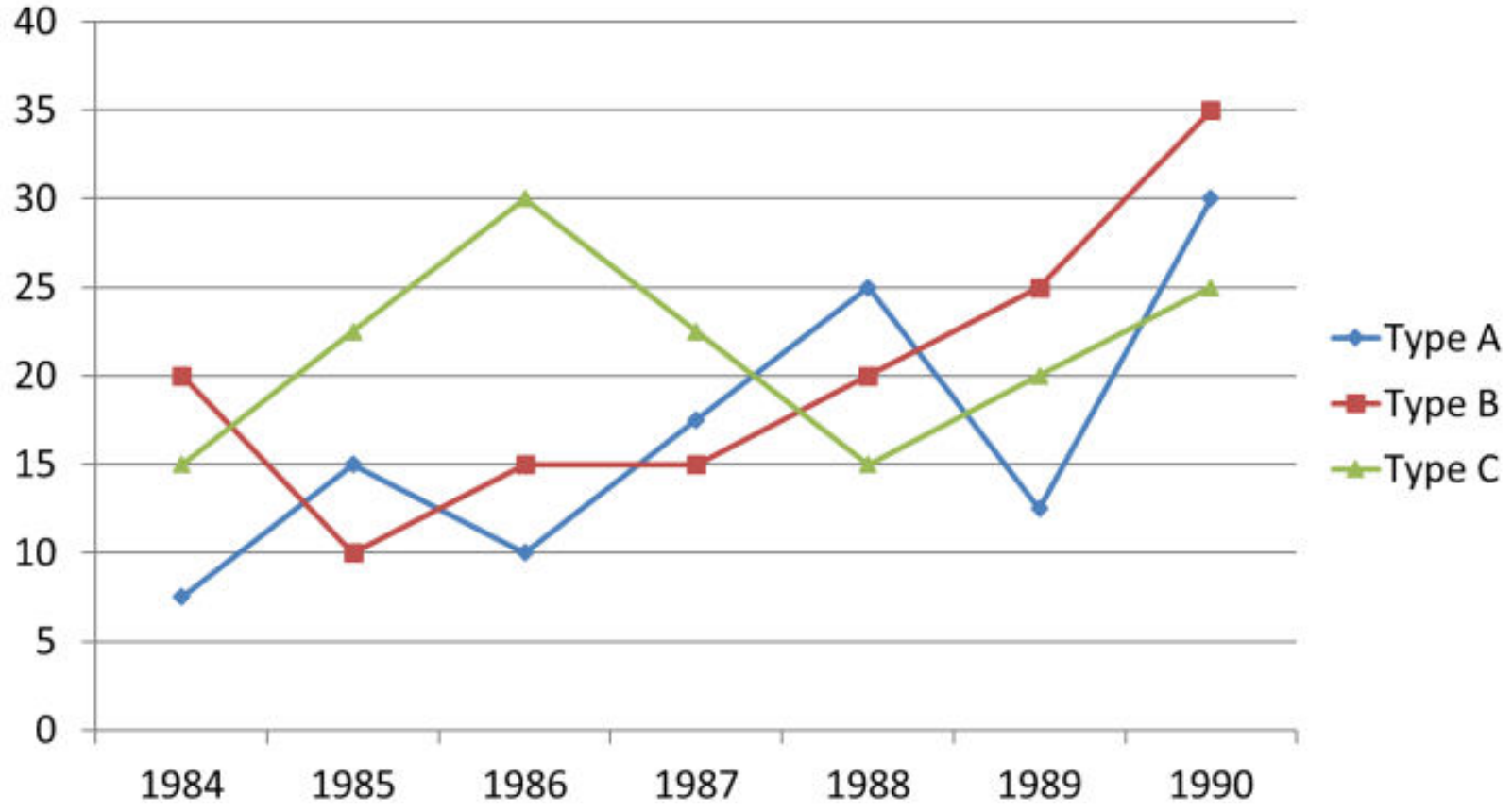
Study the following graph carefully and answer the questions given below:
Production of three types of vehicles by a company over the years (in thousand)



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23.What was the percentage increase in the production of C type vehicles from 1985 to1986?

a) 10
b) 5
c) 20
d) None of these

24.The number of A type vehicles produced in 1986 was what percent of the number of C type vehicles produced in 1988?

a) 33 1/3
b) 66 2/3
c) 50
d) 15

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25.In how many years was the production of A type vehicles less than its average production over the given years?

a) 2
b) 4
c) 3
d) 1

26.What was average number of B type vehicles produced by the company over the year s?

a) 20,000
b) 25,000
c) 15,000
d) 30,000

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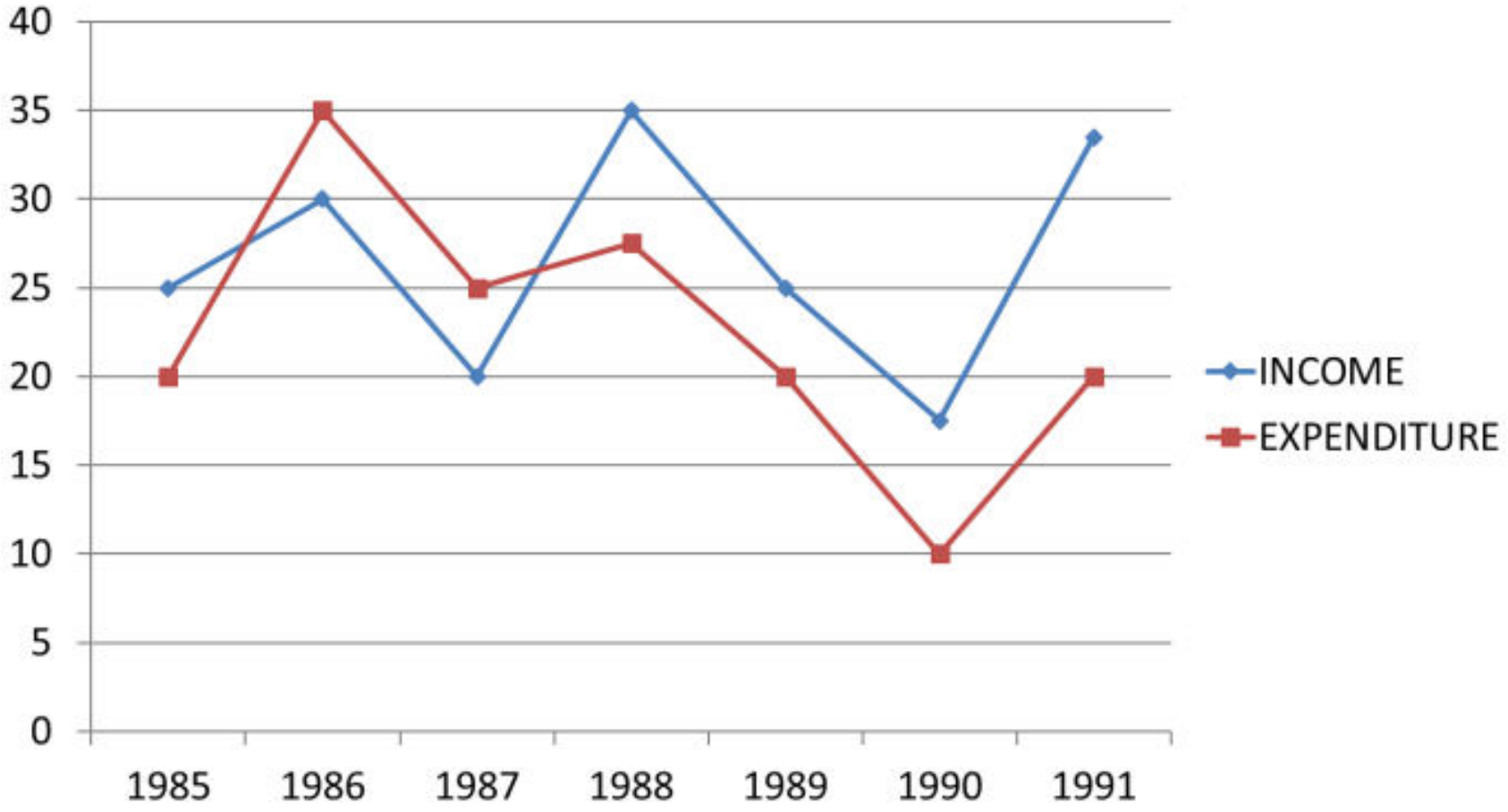
Study the following graph carefully and answer the questions given below it.
Income and Expenditure of a Company over the years (Rs. in crore)



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27. In which of the following years was the difference between the income and the expenditure the maximum?

a) 1988
b) 1991
c) 1986
d) 1987

28. The income in 1987 was equal to the expenditure in which of the following years?

a) 1985 only
b) 1990 only
c) 1985, 1989 and 1991
d) 1988 and 1989

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29. What was the approximate percentage drop in expenditure from 1988 to 1989?

a) 35
b) 25
c) 75
d) 40

30. What was the percentage increase in income from 1987 to 1988?

a) 175
b) 75
c) 60
d) 125

31. In how many of the given years was the expenditure more than the income?

a) 1
b) 3
c) 4
d) 2

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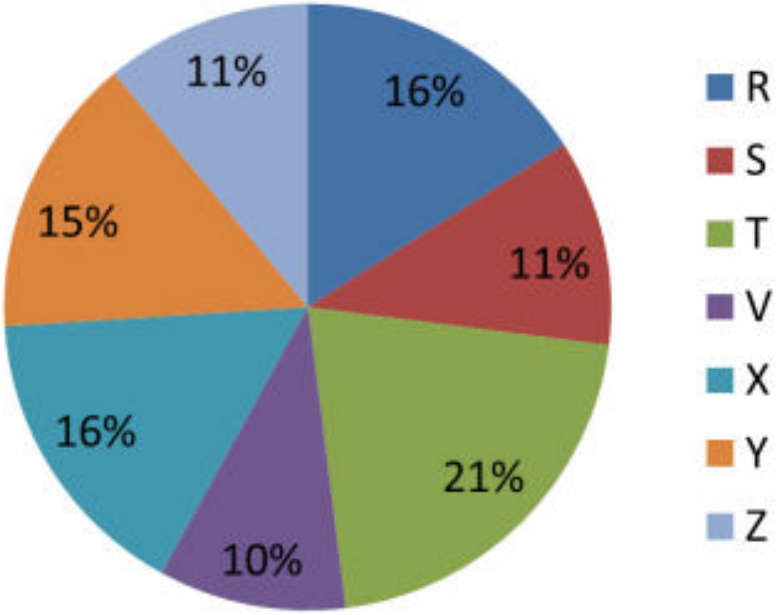
Study the following pie-chart and the table and answer the questions based on them.

Proportion of Population of Seven Villages in 1997



VILLAGE	% Population below Poverty Line
R	38
S	52
T	42
V	51
X	49
Y	46
Z	58

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32. If the population of village R in 1997 is 32000, then what will be the population of village Y below poverty line in that year?

a) 14100
b) 15600
c) 16500
d) 17000

33. The ratio of population of village T below poverty line to that of village Z below poverty line in 1997 is:

a) 11 : 23
b) 23 : 11
c) 441 : 319
d) 319 : 441

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34. Find the population of village S if the population of village X below poverty line in 1997 is 12160.

a) 18500
b) 20500
c) 22000
d) 26000

35. If in 1998, the population of villages Y and V increase by 10% each and the percentage of population below poverty line remains unchanged for all the villages, then find the population of village V below poverty line in 1998, given that the population of village Y in 1997 was 30000.

a) 11250
b) 12760
c) 13140
d) 13780

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QUE	ANS	QUE	ANS	QUE	ANS	QUE	ANS	QUE	ANS
1	1	8	B	15	D	22	C	29	B
2	2	9	D	16	A	23	D	30	B
3	4	10	D	17	B	24	B	31	D
4	C	11	B	18	D	25	B	32	B
5	A	12	A	19	D	26	A	33	C
6	D	13	C	20	A	27	B	34	C
7	A	14	D	21	D	28	C	35	B

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