

## Date Interpretation

### 1. Table Chart

Study the following table and answer the questions based on it.

**Expenditures of a Company (in Lakh Rupees) per Annum Over the given Years.**

Year	Item of Expenditure				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

1. What is the average amount of interest per year which the company had to pay during this period?

- A. Rs. 32.43 lakhs
- B. Rs. 33.72 lakhs
- C. Rs. 34.18 lakhs
- D. Rs. 36.66 lakhs

**Answer:** Option D

**Explanation:**

Average amount of interest paid by the Company during the given period

$$\begin{aligned} &= \text{Rs.} \left[ \frac{23.4 + 32.5 + 41.6 + 36.4 + 49.4}{5} \right] \text{ lakhs} \\ &= \text{Rs.} \left[ \frac{183.3}{5} \right] \text{ lakhs} \end{aligned}$$

= Rs. 36.66 lakhs.

**2. The total amount of bonus paid by the company during the given period is approximately what percent of the total amount of salary paid during this period?**

- A. 0.1%
- B. 0.5%
- C. 1%
- D. 1.25%

**Answer:** Option C

**Explanation:**

$$\begin{aligned}\text{Required percentage} &= \left[ \frac{(3.00 + 2.52 + 3.84 + 3.68 + 3.96)}{(288 + 342 + 324 + 336 + 420)} \times 100 \right] \% \\ &= \left[ \frac{17}{1710} \times 100 \right] \% \\ &\approx 1\%.\end{aligned}$$

**3. Total expenditure on all these items in 1998 was approximately what percent of the total expenditure in 2002?**

- A. 62%
- B. 66%
- C. 69%
- D. 71%

**Answer:** Option C

**Explanation:**

$$\begin{aligned}\text{Required percentage} &= \left[ \frac{(288 + 98 + 3.00 + 23.4 + 83)}{(420 + 142 + 3.96 + 49.4 + 98)} \times 100 \right] \% \\ &= \underline{495.4} \times 100 \%\end{aligned}$$

$$\left[ \frac{713.36}{1000} \right]$$

$$\approx 69.45\%$$

**4. The total expenditure of the company over these items during the year 2000 is?**

- A. Rs. 544.44 lakhs
- B. Rs. 501.11 lakhs
- C. Rs. 446.46 lakhs
- D. Rs. 478.87 lakhs

**Answer:** Option A

**Explanation:**

Total expenditure of the Company during 2000

$$= \text{Rs. } (324 + 101 + 3.84 + 41.6 + 74) \text{ lakhs}$$

$$= \text{Rs. } 544.44 \text{ lakhs.}$$

**5. The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately?**

- A. 4:7
- B. 10:13
- C. 15:18
- D. 5:8

**Answer:** Option B

**Explanation:**

$$\text{Required ratio} = \left[ \frac{(83 + 108 + 74 + 88 + 98)}{(98 + 112 + 101 + 133 + 142)} \right]$$

$$= \left[ \frac{451}{586} \right]$$

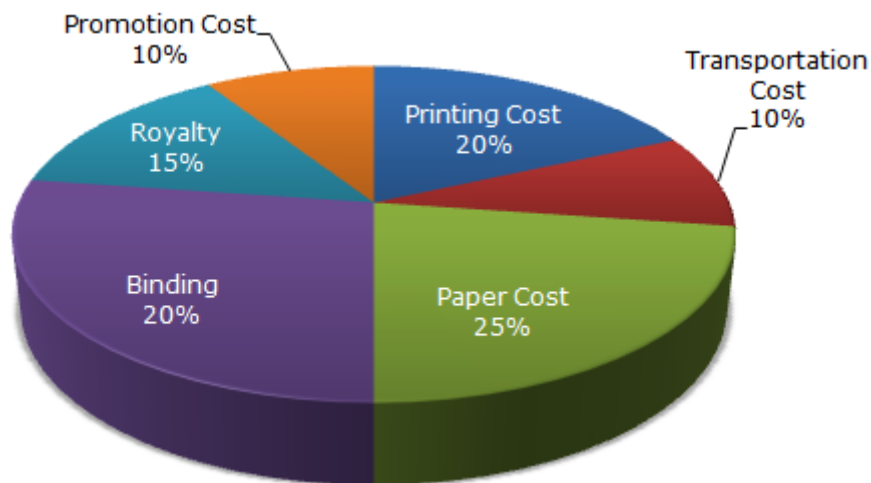
$$= \frac{1}{1.3}$$

$$= \frac{10}{13}$$

## 2. Pie Chart

The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Study the pie-chart and the answer the questions based on it.

**Various Expenditures (in percentage) Incurred in Publishing a Book**



1. if for a certain quantity of books, the publisher has to pay Rs. 30,600 as printing cost, then what will be amount of royalty to be paid for these books?

- A. Rs. 19,450
- B. Rs. 21,200
- C. Rs. 22,950

**D.** Rs. 26,150

**Answer:** Option C

**Explanation:**

Let the amount of Royalty to be paid for these books be Rs.  $r$ .

$$\text{Then, } 20 : 15 = 30600 : r \Rightarrow r = \text{Rs. } \left( \frac{30600 \times 15}{20} \right) = \text{Rs. } 22,950.$$

**2. What is the central angle of the sector corresponding to the expenditure incurred on Royalty?**

**A.**  $15^\circ$

**B.**  $24^\circ$

**C.**  $54^\circ$

**D.**  $48^\circ$

**Answer:** Option C

**Explanation:**

Central angle corresponding to Royalty = (15% of  $360^\circ$ )

$$= \left( \frac{15}{100} \times 360 \right)^\circ$$

$$= 54^\circ.$$

**3. The price of the book is marked 20% above the C.P. If the marked price of the book is Rs. 180, then what is the cost of the paper used in a single copy of the book?**

**A.** Rs. 36

**B.** Rs. 37.50

**C.** Rs. 42

**D.** Rs. 44.25

**Answer:** Option B

**Explanation:**

Clearly, marked price of the book = 120% of C.P.

Also, cost of paper = 25% of C.P

Let the cost of paper for a single book be Rs.  $n$ .

Then,  $120 : 25 = 180 : n \Rightarrow n = \text{Rs.} \left( \frac{25 \times 180}{120} \right) = \text{Rs.} 37.50$ .

**4. If 5500 copies are published and the transportation cost on them amounts to Rs. 82500, then what should be the selling price of the book so that the publisher can earn a profit of 25%?**

- A. Rs. 187.50
- B. Rs. 191.50
- C. Rs. 175
- D. Rs. 180

**Answer:** Option A

**Explanation:**

For the publisher to earn a profit of 25%, S.P. = 125% of C.P.

Also Transportation Cost = 10% of C.P.

Let the S.P. of 5500 books be Rs.  $x$ .

Then,  $10 : 125 = 82500 : x \Rightarrow x = \text{Rs.} \left( \frac{125 \times 82500}{10} \right) = \text{Rs.} 1031250$ .

$\therefore$  S.P. of one book = Rs.  $\left( \frac{1031250}{5500} \right) = \text{Rs.} 187.50$ .

**5. Royalty on the book is less than the printing cost by:**

- A. 5%
- B.  $33 \frac{1}{5}\%$
- C. 20%
- D. 25%

**Answer:** Option D

**Explanation:**

Printing Cost of book = 20% of C.P.

Royalty on book = 15% of C.P.

Difference = (20% of C.P.) - (15% of C.P) = 5% of C.P.

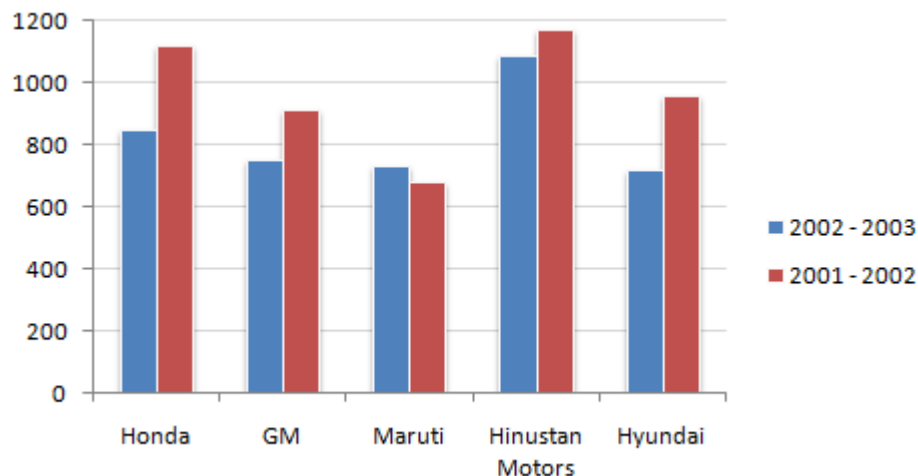
$$\therefore \text{Percentage difference} = \left( \frac{\text{Difference}}{\text{Printing Cost}} \times 100 \right) \%$$

$$= \left( \frac{5\% \text{ of C.P.}}{\text{Printing Cost}} \times 100 \right) \% = 25\%.$$

### 3. Bar Chart

Study the following bar chart and answer the questions carefully.

**Sales Turnover of 5 Companies (in Rs. crores)**



1. What is the percentage change in the overall sales turnover of the five companies together between 2001 - 2002 and 2002 - 2003 ?

- A. 17.21 %
- B. 14.68 %
- C. 12.67 %
- D. 21.24 %

**Answer:** Option B

**Explanation:**

The required answer is

100 - percentage value of the fraction (Absolute change/first year's value).

**2. What is the absolute change in overall sales turnover of the five companies together between 2001 - 2002 and 2002 - 2003 ?**

- A. 712.43
- B. 142.48
- C. 683.53
- D. None of these

**Answer:** Option A

**Explanation:**

Absolute value of the difference between the sum of the turnover of the five companies for 2001 - 2002 and 2002 - 2003.

**3. Which of the companies shows the maximum percentage difference in sales turnover between the two years ?**

- A. Honda
- B. GM
- C. Hyundai
- D. Maruti

**Answer:** Option C

**Explanation:**

Hyundai with 25.25 % is marginally higher than Honda with 24.5 %.

**4. What should have been the sales turnover of GM in 2002 - 2003 to have shown an excess of the same quantum over 2001 - 2002 as shown by the sales turnover of Maruti ?**

- A. 953.76
- B. 963.76



C. 952.76

D. 962.76

**Answer:** Option D

**Explanation:**

GM should have increased its sales turnover by Rs.49.13 crore. Hence, the answer is  $913.63 + 49.13 = 962.76$ .

**5. What is the approximate difference between the average sales turnover of all the companies put together between the years 2001 - 2002 and 2002 - 2003 ?**

A. 133.45

B. 142.48

C. 117.6

D. None of these

**Answer:** Option B

**Explanation:**

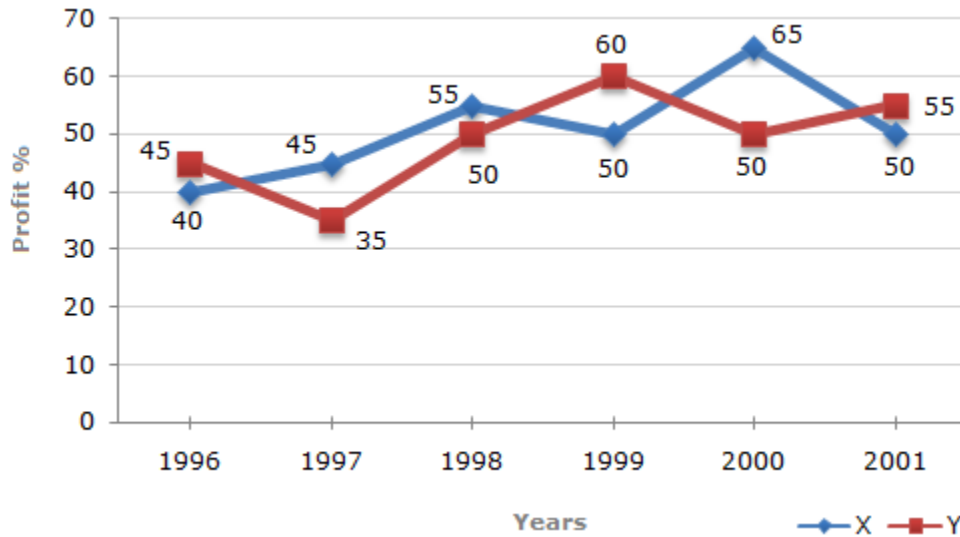
Difference between the sum of the two years divided by 5.

## **4. Line Chart**

The following line graph gives the percent profit earned by two Companies X and Y during the period 1996 - 2001.

**Percentage profit earned by Two Companies X and Y over the Given Years**

$$\% \text{Profit} = \frac{\text{Income} - \text{Expenditure}}{\text{Expenditure}} \times 100$$



1. The incomes of two Companies X and Y in 2000 were in the ratio of 3:4 respectively. What was the respective ratio of their expenditures in 2000 ?

- A. 7:22
- B. 14:19
- C. 15:22
- D. 27:35

**Answer:** Option C

**Explanation:**

Let the incomes in 2000 of Companies X and Y be  $3x$  and  $4x$  respectively. And let the expenditures in 2000 of Companies X and Y be  $E_1$  and  $E_2$  respectively.

Then, for Company X we have:

$$65 = \frac{3x - E_1}{E_1} \times 100 \Rightarrow \frac{65}{100} = \frac{3x}{E_1} - 1 \Rightarrow E_1 = 3x \times \left(\frac{100}{165}\right) \dots (i)$$

For Company Y we have:

$$50 = \frac{4x - E_2}{E_2} \times 100 \Rightarrow \frac{50}{100} = \frac{4x}{E_2} - 1 \Rightarrow E_2 = 4x \times \left(\frac{100}{150}\right) \dots (ii)$$

From (i) and (ii), we get:

$$\frac{E_1}{E_2} = \frac{3x \times \left(\frac{100}{165}\right)}{4x \times \frac{100}{150}} = \frac{3 \times 150}{4 \times 165} = \frac{15}{22} \text{ (Required ratio).}$$

(150)

2. If the expenditure of Company Y in 1997 was Rs. 220 crores, what was its income in 1997 ?

- A. Rs. 312 crores
- B. Rs. 297 crores
- C. Rs. 283 crores
- D. Rs. 275 crores

**Answer:** Option B

**Explanation:**

Profit percent of Company Y in 1997 = 35.

Let the income of Company Y in 1997 be Rs.  $x$  crores.

$$\text{Then, } 35 = \frac{x - 220}{220} \times 100 \Rightarrow x = 297.$$

$\therefore$  Income of Company Y in 1997 = Rs. 297 crores.

3. If the expenditures of Company X and Y in 1996 were equal and the total income of the two Companies in 1996 was Rs. 342 crores, what was the total profit of the two Companies together in 1996 ? (Profit = Income - Expenditure)

- A. Rs. 240 crores
- B. Rs. 171 crores
- C. Rs. 120 crores
- D. Rs. 102 crores

**Answer:** Option D

**Explanation:**

Let the expenditures of each companies X and Y in 1996 be Rs.  $x$  crores.

And let the income of Company X in 1996 be Rs.  $z$  crores.

So that the income of Company Y in 1996 = Rs.  $(342 - z)$  crores.

Then, for Company X we have:

$$40 = \frac{z - x}{x} \times 100 \Rightarrow \frac{40}{100} = \frac{z}{x} - 1 \Rightarrow x = \frac{100z}{140} \dots (i)$$

Also, for Company Y we have:

$$45 = \frac{(342 - z)}{x} \times 100 \Rightarrow \frac{45}{100} = \frac{(342 - z)}{x} - 1 \Rightarrow x = \frac{(342 - z) \times 100}{145} \dots (ii)$$

From (i) and (ii), we get:

$$\frac{100z}{140} = \frac{(342 - z) \times 100}{145} \Rightarrow z = 168.$$

Substituting  $z = 168$  in (i), we get :  $x = 120$ .

∴ Total expenditure of Companies X and Y in 1996 =  $2x =$  Rs. 240 crores.

Total income of Companies X and Y in 1996 = Rs. 342 crores.

∴ Total profit = Rs. (342 - 240) crores = Rs. 102 crores.

**4. The expenditure of Company X in the year 1998 was Rs. 200 crores and the income of company X in 1998 was the same as its expenditure in 2001. The income of Company X in 2001 was ?**

- A. Rs. 465 crores
- B. Rs. 385 crores
- C. Rs. 335 crores
- D. Rs. 295 crores

**Answer:** Option A

**Explanation:**

Let the income of Company X in 1998 be Rs.  $x$  crores.

$$\text{Then, } 55 = \frac{x - 200}{200} \times 100 \Rightarrow x = 310.$$

∴ Expenditure of Company X in 2001 = Income of Company X in 1998

$$= \text{Rs. 310 crores.}$$

Let the income of Company X in 2001 be Rs.  $z$  crores.

$$\text{Then, } 50 = \frac{z - 310}{x} \times 100 \Rightarrow z = 465.$$

∴ Income of Company X in 2001 = Rs. 465 crores.

**5. If the incomes of two Companies were equal in 1999, then what was the ratio of expenditure of Company X to that of Company Y in 1999 ?**

- A. 6:5
- B. 5:6
- C. 11:6
- D. 16:15

**Answer:** Option D

**Explanation:**

Let the incomes of each of the two Companies X and Y in 1999 be Rs.  $x$ .  
And let the expenditures of Companies X and Y in 1999 be  $E_1$  and  $E_2$  respectively.

Then, for Company X we have:

$$50 = \frac{x - E_1}{E_1} \times 100 \Rightarrow \frac{50}{100} = \frac{x}{E_1} - 1 \Rightarrow x = \frac{150}{100}E_1 \dots (i)$$

Also, for Company Y we have:

$$60 = \frac{x - E_2}{E_2} \times 100 \Rightarrow \frac{60}{100} = \frac{x}{E_2} - 1 \Rightarrow x = \frac{160}{100}E_2 \dots (ii)$$

From (i) and (ii), we get:

$$\frac{150}{100}E_1 = \frac{160}{100}E_2 \Rightarrow \frac{E_1}{E_2} = \frac{160}{150} = \frac{16}{15} \text{ (Required ratio).}$$