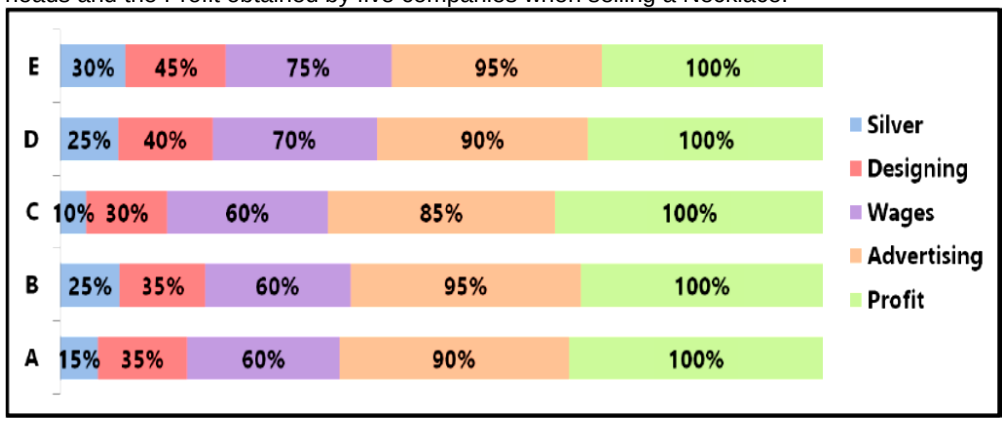
DI Test 7

(1 - 5) The bar graph gives Cumulative percentage split - up of the cost incurred under different heads and the Profit obtained by five companies when selling a Necklace.



1. If the ratio of the selling price of Necklace of A, B, C and D is 4 : 5 : 3 : 6, then who among them has spent the least amount on Silver in each Necklace?
(A) A (B) B (C) C (D) D (E) None of these

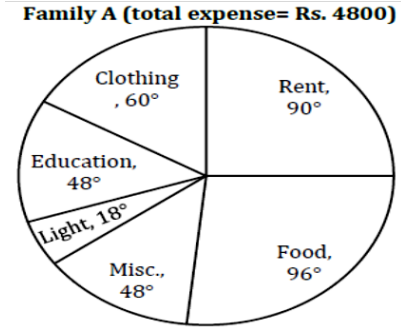
2. What is the maximum Profit percentage for any of the given companies?
(A) 12.5% (B) 14.28% (C) 16.50% (D) 17.64% (E) None of these

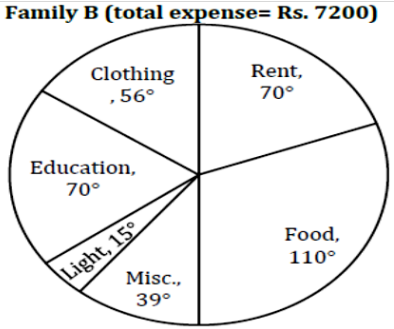
3. Which company earns maximum Profit?
(A) A (B) E (C) C (D) Can't be determined (E) None of these

4. If the cost incurred per Necklace by C under any head were more than the corresponding figure of A, then the selling price per Necklace for C was at least what percentage more than that of A? (A) 25% (B) 50% (C) 75% (D) 100% (E) None of these

5. If the selling price of every Necklace sold by all five companies is equal and they sold equal number of Necklace, then what is the ratio between the total amount spend by them on Designing the Necklaces and total amount given as Wages?
(A) 4 : 7 (B) 5 : 8 (C) 2 : 5 (D) 7 : 9 (E) None of these

Directions (6 – 10): The two pie diagrams given below provide relative expenses of two families A and B.





6. If 60% of expenses on misc. of family A are on 'repair' and 30% of expenses on misc. of family B were on 'travel' then what is the ratio of expenses on education of family A to the sum of expenses on repair of family A and that of travel of family B?
(a) 310 : 309 (b) 330 : 319 (c) 320 : 309 (d) 330 : 312 (e) 309 : 311

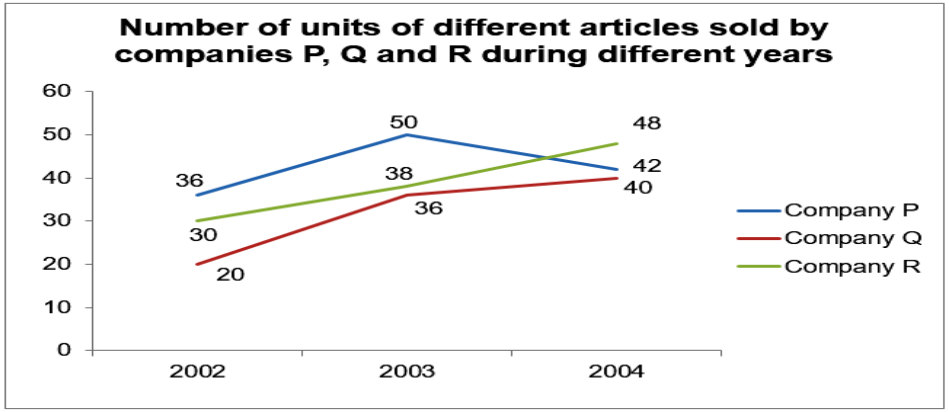
7. If total expenses of family A are tripled, then expense on education, clothing and rent together of family B is what percentage of expenses on clothing, rent and Food together of family A?(Rounded off to two decimal places)
(a) 36.75% (b) 42.23% (c) 38.43% (d) 39.83% (e) 32.98%

8. The expenses on education of families A and B together is what percent more/less than the expense on rent of both the families? (approximately)
(a) 22% (b) 28% (c) 18% (d) 32% (e) 16%

9. If the total expenses of A and B are doubled, then what is the ratio of expenditure on light of family A to that of misc. of family B?
(a) 37 : 43 (b) 4 : 13 (c) 42 : 11 (d) 11 : 42 (e) 13 : 4

10. The item showing the least difference in expenditure between family A and family B is.
(a) Light (b) Clothing (c) Misc. (d) Education (e) None of these

Directions (11-15): Study the following bar graph carefully to answer the given questions.



11. What was the difference between the total number of units of the article sold by the 3 companies combined in 2003 and that of 2004?
A. 9 B. 12 C. 2 D. 6 E. None of these

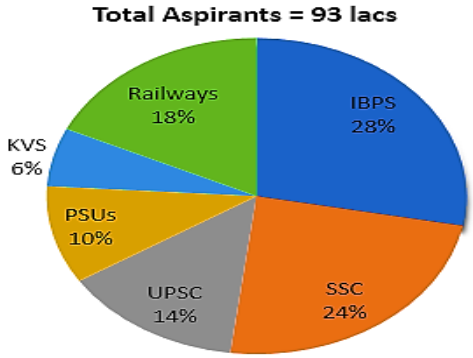
12. What was the ratio of the total number of units sold by company P and R combined in 2002 to the total number of units sold by company P and R combined in 2004?
A. 3:7 B. 12:13 C. 11:15 D. 5:13 E. 11:9

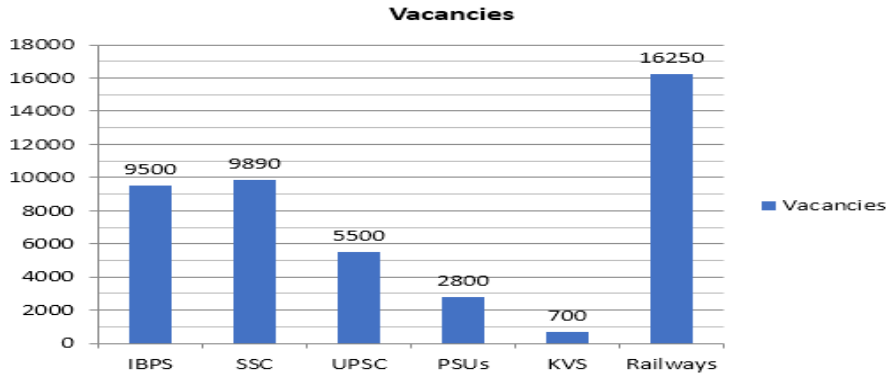
13. **In 2003, the number of units sold by company Q was what percentage of the number of units sold by company P?** A. 42% B. 38% C. 72% D. 68% E. None of these

14. What was the average of the number of units sold by company Q during the period 2002 to 2004? A. 32 B. 20 C. 38 D. 26 E. 22

15. If in 2005, the number of units sold by each of the companies increased by 50% as compared to 2004, then what was the total number of units sold by the 3 companies combined in 2005? A. 124 B. 182 C. 166 D. 158 E. 195

Directions (16–20): Study the following pie chart and bar graph carefully to answer the following questions. The pie chart shows the percentage distribution of aspirants who have applied for various exams. The bar graph shows the vacancy in these exams.





16. Average of all aspirants who have applied for various given exam is approximately how many times the total no. of vacancies?
a) 39 b) 32 c) 35 d) 38 e) 41

17. If Railways reduces two-fifth of its vacancies, then total vacancies will be reduced by how much percent?
a) 13.56% b) 14.56% c)18.2% d) 17% e) None of these

18. What will be the difference between average number of aspirants per post in SSC and the average number of aspirant per post in IBPS?
a) 56 b) 41 c) 45 d) 52 e) 48

19. If no. of vacancies of IBPS increased by 10% and for one final selection in all the given vacancies three aspirants would be rejected during interviews. Find no. of aspirant qualified for Interview for IBPS is approximately how many times the no of aspirant qualified for PSUs and KVS interviews both?
a) 3 b) 3.5 c) 5 d) 4.5 e) 2

20. Out of all vacancies allocated, 15% of the selected aspirants didn't join. Hence 8% of the IBPS and 10% of Railways vacancies remain unfilled. What will be the approximate value of ratio between total vacancies remain unfilled for IBPS and Railways together to Rest of the organizations vacancy which remain unfilled.?
a) 5 : 7 b) 4 : 5 c) 5 : 9 d) 9 : 11 e) 11 :13

(21 – 25) There are 300 products manufactured by factory A in which number of Ice cream and chocolates manufactured in ratio 2 : 3 and the number of 5 star and Kit - Kat chocolate manufactured in ratio 2 : 7. In factory B, total number of 5 star and Kit - Kat chocolates manufactured are 50 and 80 respectively while the total number of Ice cream and chocolates manufactured is in ratio 10 : 13. In factory C the number of Ice cream manufactured is 150 and the number of chocolates manufactured is 20% more than the number of chocolates manufactured by factory B whereas the number of Kit - Kat and 5 star chocolates manufactured is in the ratio 7 : 5.

21. What is the overall ratio of Kit - Kat and 5 star chocolates manufactured by all three factories together?
(A) 311.155 (B) 115.311 (C) 126.125 (D) 254.255 (E) None of these

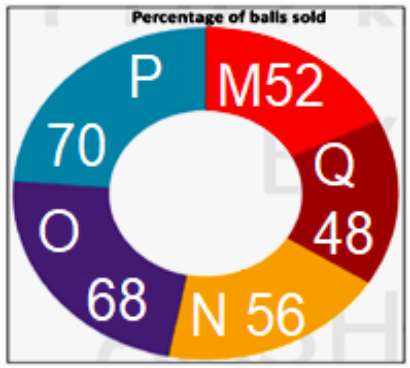
22. The total number of Ice cream manufactured in all 3 factories is what % more or less than total number of Kit - Kat chocolates manufactured in all these 3 factories?
(A) 18.97% (B) 19.99% (C) 18.65% (D) 20% (E) None of these

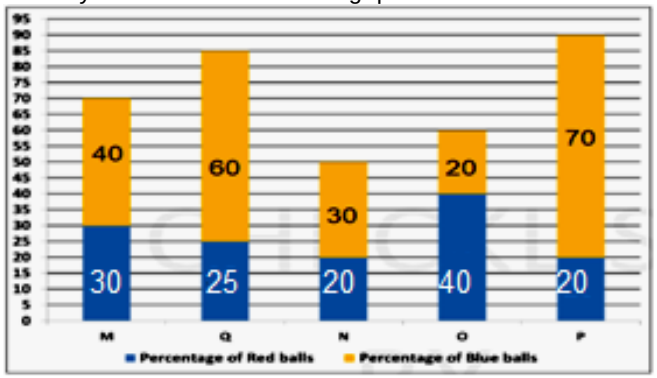
23. Find the average number of chocolates manufactured in factory B and C together. (A) 1123 (B) 143 (C) 156 (D) 165 (E) None of these

24. Find the total products produced in factory C.
(A) 310 (B) 306 (C) 308 (D) 320 (E) None of these

25. What is the difference between the average number of Kit - Kat chocolates manufactured in factory A and C and the total number of Ice cream manufactured in factory A?
(A) 4 : 5 (B) 3 : 8 (C) 7.5 (D) 7.6 (E) None of these

Directions (26 - 30): The graphs show the percentage of balls sold by five shops out of the total balls with them and the percentage of red and blue balls sold by them out of the total balls sold by them. The total balls with each shop is given as 6500 and the total balls sold = Red balls + Blue balls+ Black balls sold. Study the data carefully and answer the following questions.





26. Find the total number of black balls sold by them all.
A. 5525 B. 5808 C. 5616 D. 5404 E. None of the above

27. Find the average number of balls sold by all of them.
A. 3864 B. 3822 C. 3856 D. 3842 E. None of the above

28. The number of red balls sold by all are approximately what per cent of the total number of balls sold by all?
A. 29.4% B. 31.2% C. 35.5% D. 27.2% E. None of the above

29. Find the average number of blue balls sold by all.
A. 1677 B. 1567 C. 1876 D. 1657 E. None of the above

30. What is the ratio of the number of black balls sold by N to that of the number of red balls sold by P?
A. 2:3 B. 3:4 C. 2:1 D. 1:4 E. None of the above

Directions (31 – 35): There are five classes 8, 9, 10, 11 and 12 in a school and total number of boys in year 2020 in all classes is 822 and total number of girls in year 2020 in all classes is 828. The number of boys in class 9 is 135. The ratio of the number of boys and girls in class 9 is 3 : 5. Number of girls in class 12 is 10 more than the average of number of boys and number of girls in class 9. The number of boys in class 11 is 10% less than the number of girls in class 12. The number of boys in class 10 is 17/4 times the difference between the number of boys in class 11 and the number of boys in class 9. The ratio of the number of boys and girls in class 10 is 17 : 13. The number of girls in class 8 is 34 less than the number of girls in class 12. The ratio of the number of boys to the number of girls in class 8 is the same as the ratio of the number of boys to the number of girls in class 10.

31. What is the difference between the total number of students in class 8 and 11 in the year 2020?
(A) 48 (B) 46 (C) 41 (D) 49 (E) None of these

32. The number of students studying in class 9 in the year 2020 is what percent of the number of students studying in class 10 in the year 2020?
(A) 139.50% (B) 135.25% (C) 133.33% (D) 139.66% (E) None of these

33. What is the difference between the total number of boys in class 10, 11 and 12 together and the total number of girls in class 8, 9 and 12 together?
(A) 84 (B) 85 (C) 86 (D) 88 (E) None of these

34. What is the ratio of the number of boys in class 9 to the number of girls in class 11?
(A) 28 : 27 (B) 27 : 28 (C) 29 : 28 (D) 28 : 29 (E) None of these

35. If the number of students studying in class 8 is increased by 25% and the ratio of boys and girls remains the same, then what will be the total number of girls in all the classes?
(A) 848 (B) 852 (C) 842 (D) 867 (E) None of these

{1 – 5}

Head ➔	Silver	Designing	Wages	Advertising	Profit
A	15	20	25	30	10
B	25	10	25	35	5
C	10	20	30	25	15
D	25	15	30	20	10
E	30	15	30	20	5

1. Ans. (C)
Amount spent on Silver,
By A = 15 × 4 = 60, By B = 25 × 5 = 125
By C = 10 × 3 = 30, By D = 25 × 6 = 150
Least amount spent by =C
2. Ans. (D)
P% in Company A = 10/90 × 100 = 11.11%
P% in Company B = 5/95 × 100 = 5.26%
P% in Company C = 15/85 × 100 = 17.64%
P% in Company D = 10/90 × 100 = 11.11%
P% in Company E = 5/95 × 100 = 5.26%
Maximum Profit % earned = 17.64%
3. Ans. (C)
Maximum Profit earned by Company C
4. Ans. (B)
CP of Necklace for A = x Rs.
CP of Necklace for B = y Rs.
$0.15x \le 0.1y$ $\Rightarrow 1.5x \le y$
$0.2x \le 0.2y$ $\Rightarrow x \le y$
$0.25x \le 0.3y$ $\Rightarrow 0.083x \le y$
$0.30x \le 0.25y$ $\Rightarrow 1.2x \le y$
Required % = $(y - x)/x \times 100 = (1.5y - y)/y \times 100 = 50\%$
5. Ans. (A)
Ratio = (20 + 10 + 20 + 15 + 15) : (25 + 25 + 30 + 30 + 30)
= 80 : 140 = 4 : 7
{6 – 10}
6

$$\textbf{(c)};\ \text{Req. Ratio} = \frac{\frac{48}{360}\times 4800}{\frac{60}{100}\times\frac{48}{360}\times 4800+\frac{30}{100}\times\frac{39}{360}\times 7200}$$

$$= \frac{640}{384+234} = \frac{640}{618} = \frac{320}{309}$$

7 to 10

$$\textbf{(d)};\ \text{Req. Percentage} = \frac{\frac{196}{360}\times 7200}{\frac{246}{360}\times 14400}\times 100 = 39.83\%$$

$$\textbf{(a)};\ \text{Expense on education} = \frac{48}{360}\times 4800 + \frac{70}{360}\times 7200$$

$$= 2040$$

$$\text{Expense on rent} = \frac{90}{360}\times 4800 + \frac{70}{360}\times 7200$$

$$= 2600$$

$$\text{Req. percentage} = \frac{(2600-2040)}{2600}\times 100$$

$$= 21.53\% \approx 22\%$$

$$\textbf{(b)};\ \text{Req. ratio} = \frac{\frac{18}{360}\times 4800}{\frac{39}{360}\times 7200} = \frac{4}{13}$$

(Note: Doubled expenses don't alter the ratio)

(a);

Item	Difference		
Clothing	1120 – 800	=	320
Rent	1400 – 1200	=	200
Food	2200 – 1280	=	920
Misc.	780 – 640	=	140
Light	300 – 240	=	60
Education	1400 – 640	=	760

{11 – 15}
11. Solution
Total number of units of the article sold by the 3 companies combined in 2003
= 50 + 36 + 38 = 124
Total number of units of the article sold by the 3 companies combined in 2004
= 42 + 40 + 48 = 130
Required difference = 130 – 124 = 6
Hence, option d.
12. Solution
Total number of units sold by company P and R combined in 2002 = 36 + 30 = 66
Total number of units sold by company P and R combined in 2004 = 42 + 48 = 90
Required ratio = 66 : 90 = 11 : 15
Hence, option c.
13. Solution
Required percentage = (36/50) × 100 = 72%
Hence, option c.
14. Solution
Required average = (20 + 36 + 40) / 3 = 96/3 = 32
Hence, option a.
15. Solution
Total number of units sold by the 3 companies combined in 2005
= 1.5 × (42 + 40 + 48) = 195
Hence, option e.
{16 – 20}
16. Solution
Average number of Air conditioners sold in May, June, and July = (275 + 325 + 300)/3
= 300
Average number of Coolers sold in May, June, and July = (350 + 225 + 400)/3 = 325
Therefore, required difference = 325 – 300 = 25

Hence, option d.

17. Solution

Total number of Air conditioners and Coolers sold in August = 250 + 350 = 600
Total number of Air conditioners sold in April and July = 200 + 300 = 500
Therefore, required percentage = [(600 – 500)/500] × 100 = 20%
Hence, option a.

18. Solution

Total number of Air conditioners and Coolers sold in May = 275 + 350 = 625
Total number of Air conditioners and Coolers sold in June = 325 + 225 = 550
Therefore, required difference = 625 – 550 = 75
Hence, option b.

19. Solution

Required average = (450 + 350 + 225 + 400 + 350)/5 = 355
Hence, option e.

20. Solution

Required ratio = 275: 225 = 11: 9
Hence, option a.

{21 – 25}

Product →	Ice Cream	Chocolates		Total
		Kit - Kat	5 Star	
A	120	140	40	300
B	100	80	50	230
C	150	91	65	306
Total	370	311	155	836

21) Ans. (A)

Total Kit - Kat Chocolates produced : Total 5 Star Chocolates produced
= 311 : 155

22) Ans. (A)

Ice Creams produced are more than Kit - Kat Chocolates produced by
= (370 – 311) × 100/311 = 18.97%

23) Ans. (B)

Average Chocolates produced in, Factory B & Factory C
= [(80 + 50) + (91 + 65)]/2 = (130 + 156)/2 = 143

24) Ans. (B)

Total product produced in Factory C = 306

25) Ans. (A)

Average Kit - Kat Chocolates produced in Factory A & C – Ice Creams produced in Factory A = 120 – (140 + 91)/2 = 120 – 115.5 = 4.5

{26 – 30}

1. Required number = 5525
2. Required average = $\frac{19110}{5}$ = 3882
3. Required percentage = $\frac{5200}{19110}$ *100= 27.2%
4. Required average = $\frac{8385}{5}$ = 1677
5. Required ratio = $\frac{1820}{910}$ = 2:1

{31 – 35}

Class →	8th	9th	10th	11th	12th	Total
Boys	204	135	153	171	159	822
Girls	156	225	117	140	190	828
Total	360	360	270	311	349	1650

31) Ans. (D)

Students in class 8th – Students in class 11th = 360 – 311 = 49

32) Ans. (C)

% of number of Students in class 9 with Students in class 10
= 360 × 100/270 = 133.33%

33) Ans. (D)

Boys in class 10th, 11th & 12th = 153 + 171 + 159 = 483
Girls in Class 8th, 9th & 12th = 156 + 225 + 190 = 571
Difference = 571 – 483 = 88

34) Ans. (B)

Boys in class 9th : Girls in class 11th = 135 : 140 = 27 : 28

35) Ans. (D)

New Total of Girls in all classes = 828 + 0.25 × 156 = 828 + 39
= 867