EXERCISE 16(B)

1. Express
(i) Rs 5 as a percentage of Rs 25
(ii) 80 paise as a percent of Rs 4
(iii) 700 gm as a percentage of 2.8 kg
(iv) 90 cm as a percent of 4.5 m
Solution:
(i) Rs 5 as a percentage of Rs 25
Rs 5 as a percentage of Rs 25 is given below
5 / 25 × 100
= 5 × 4
= 20%
Hence, Rs 5 is 20% of Rs 25
(ii) 80 paise as a percent of Rs 4
80 paise as a percent of Rs 4 is given below
We know that,
Rs 4 = 400 paisa
80 / 400 × 100
= 80 / 4
= 20%
Hence, 80 paisa is 20% of Rs 4
(iii) 700 gm as a percentage of 2.8 kg
700 gm as a percent of 2.8 kg is given below
We know that,
1 kg = 1000 gm
Thus, 2.8 kg = 2800 gm
So,
700 / 2800 × 100 = 700 / 28
= 100 / 4
We get,
= 25%
Hence, 700 gm is 25% of 2.8 kg
(iv) 90 cm as a percent of 4.5 m
90 cm as a percent of 4.5 m is given below
We know that,
1 m = 100 cm
Thus, 4.5 m = 450 cm
So,
90 / 450 × 100 = 900 / 45

= 20%
Hence, 90 cm is 20% of 4.5 m

2. Express the first quantity as a percent of the second:
(i) 40 P, Rs 2
(ii) 500 gm, 6 kg
(iii) 42 seconds, 6 minutes
Solution:
(i) 40 P, Rs 2
40 P as a percent of Rs 2 is shown below
We know that,
1 Rs = 100 P
So, 2 Rs = 200 P
40 / 200 × 100 = 40 / 2
We get,
= 20%
Hence, 40 P is 20 % of Rs 2
(ii) 500 gm, 6 kg
500 gm as a percent of 6 kg is shown below
We know that,
1 kg = 1000 gm
So, 6 kg = 6000 gm
500 / 6000 × 100 = 500 / 60
= 50 / 6
We get,
= 25 / 3
= $8\frac{1}{3}$ %
Hence, 500 gm is $8\frac{1}{3}$ % of 6 kg
(iii) 42 seconds 6 minutes
42 seconds as a percent of 6 minutes is shown below
We know that,
1 min = 60 sec
So, 6 min = 360 sec
42 / 360 × 100 = 420 / 36
= 35 / 3
We get,
= $11\frac{2}{3}$ %

Hence, 42 sec is $11\frac{2}{3}$ % of 6 minutes

3. Find the value of each of the following:
(i) 20% of Rs 150
(ii) 90% of 130
(iii) 15% of 2 minutes
(iv) 7.5% of 500 kg
Solution:
(i) 20% of Rs 150
20% of Rs 150 is given below
20 / 100 × 150 = 2 × 15
We get,
= 30
Hence, 20% of Rs 150 is Rs 30
(ii) 90% of 130
90% of 130 is given below
90 / 100 × 130 = 9 × 13
We get,
= 117
Hence, 90% of 130 is 117
(iii) 15% of 2 minutes
15% of 2 minutes is given below
We know that,
1 min = 60 sec
So, 2 min = 120 sec
15 / 100 × 120 = (15 × 12) / 10
We get,
= 180 / 10
= 18 sec
Hence, 15% of 2 min is 18 sec
(iv) 7.5% of 500 kg
7.5% of 500 kg is given below
7.5 / 100 × 500 = 7.5 × 5
We get,
= 37.5 kg
Hence, 7.5% of 500 kg is 37.5 kg

4. If a man spends 70% of his income, what percent does he save?
Solution:
Let the total income of the man be = Rs 100
If a man spends 70% of his income, then total expense = 70 / 100 × 100
= Rs 70
Savings after his expenditure = 100 – 70 = 30
Hence, his savings in percent = 30 / 100 × 100
= 30%
Therefore, the man saved 30% of his total income

5. A girl gets 65 marks out of 80. What percent marks did she get?
Solution:
Total marks in the exam = 80
Marks obtained by a girl = 65
Her percentage = 65 / 80 × 100
= 650 / 8
We get,
= 81.25%
Therefore, the marks obtained by a girl in percentage is 81.25%

6. A class contains 25 children, of which 6 are girls. What percentage of the class are the boys
Solution:
Total number of children in the class = 25
Number of girls = 6
Number of boys = 25 – 6
= 19 boys
Thus, percentage of boys in the class = 19 / 25 × 100
= 19 × 4
We get,
= 76%
Therefore, there are 76% of boys in the class

7. A tin contains 20 litres of petrol. Due to leakage, 3 litres of petrol is lost. What percent is still present in the tin?
Solution:
Total quantity of petrol in the tin = 20 litres
Quantity of petrol lost, due to leakage = 3 litres
Now, quantity of petrol left in the tin = (20 – 3) = 17 litres

Therefore, percentage of petrol left in the tin = 17 / 20 × 100
= 17 × 5
We get,
= 85%
Thus, 85% of petrol is left in the tin

8. An alloy of copper and zinc contains 45% copper and the rest zinc. Find the weight of zinc in 20 kg of the alloy.
Solution:
Total weight of the alloy = 20 kg
Percentage of copper = 45%
So, percentage of zinc = (100 – 45) %
= 55%
As total quantity is always 100%
Thus, weight of zinc = 55 / 100 × 20 = 110 / 10
= 11 kg
Therefore, the weight of zinc in the alloy is 11 kg

9. A boy got 60 out of 80 in Hindi, 75 out of 100 in English and 65 out of 70 in Arithmetic. In which subject his percentage of marks the best? Also, find his overall percentage
Solution:
Marks obtained by a boy in Hindi out of 80 = 60 marks
So, his percentage in Hindi = 60 / 80 × 100 = 600 / 8
= 75%
Marks obtained by a boy in English out of 100 = 75
So, his percentage in English = 75 / 100 × 100 = 75%
Marks scored by a boy in Arithmetic out of 70 = 65
So, his percentage in Arithmetic = 65 / 70 × 100 = 650 / 7
= $92\frac{6}{7}$ %
Clearly, it shows that he gets best marks in Arithmetic
Now,
Total marks of all the three subjects = 80 + 100 + 70
= 250 marks
Total marks obtained by a boy in all the three subjects = 60 + 75 + 65
= 200 marks
His overall percentage = 200 / 250 × 100 = 2000 / 25
= 80%

Hence, the overall percentage of a boy is 80%

10. In a camp, there were 500 soldiers. 60 more soldiers joined them. What percent of the earlier (original) number have joined the camp
Solution:
Total number of soldiers in the camp = 500 soldiers
Number of soldiers joined the camp = 60 soldiers
So, percentage of soldiers joining the camp as per the earlier strength
= 60 / 500 × 100
= 60 / 5
We get,
= 12%
Therefore, 12% of soldiers joined the camp as per the earlier strength

11. In a plot of ground of area 6000 sq. m, only 4500 sq. m is allowed for construction. What percent is to be left without construction?
Solution:
Total area of the plot = 6000 sq. m
Area of plot allowed for construction = 4500 sq. m
So, area of plot left = (6000 – 4500) sq. m
= 1500
Thus, area of plot left in percentage = 1500 / 6000 × 100
= 150 / 6
We get,
= 25%
Therefore, 25% of plot is left without construction

12. Mr. Sharma has a monthly salary of Rs 8000. If he spends Rs 6400 every month, find:
(i) his monthly expenditure as percent
(ii) his monthly savings as percent
Solution:
(i) his monthly expenditure as percent
Total salary of Mr. Sharma in a month = Rs 8000
Money spent by him in every month = Rs 6400
So, his expenditure percentage = 6400 / 8000 × 100 = 640 / 8
= 80%
Therefore, Mr. Sharma spends 80% of his salary
(ii) his monthly savings as percent

Total salary of Mr. Sharma in a month = Rs 8000
Money spent by him in every month = Rs 6400
So, His monthly saving = Rs (8000 – 6400)
= Rs 1600
His savings in percentage = 1600 / 8000 × 100
= 160 / 8
= 20%
Therefore, Mr. Sharma saves 20% of his salary

13. The monthly salary of Rohit is Rs 24000. If his salary increases by 12%, find his new monthly salary
Solution:
Monthly salary of Rohit = Rs 24000
Percent increased in his salary = 12%
Thus, increase in his salary = 12 / 100 × 24000
= 12 × 240
= Rs 2880
Hence, his new salary is = 24000 + 2880
= Rs 26880
Therefore, the new salary of Rohit is Rs 26880

14. In a sale, the price of an article is reduced by 30%. If the original price of the article is Rs 1800, find:
(i) the reduction in the price of the article
(ii) reduced price of the article
Solution:
(i) the reduction in the price of the article
Original price of an article = Rs 1800
The price of an article reduced by = 30%
Hence, reduction in the price = 30 / 100 × 1800
= 30 × 18
= 540
Therefore, the price of an article reduced by Rs 540
(ii) reduced price of the article
Original price of an article = Rs 1800
Reduction in price = Rs 540
Hence, the final price = Rs (1800 – 540)
= Rs 1260
Therefore, the final price of the article is Rs 1260

15. Evaluate:
(i) 30% of 200 + 20% of 450 – 25% of 600
(ii) 10% of Rs 450 – 12% of Rs 500 + 8% of Rs 500
Solution:
(i) 30% of 200 + 20% of 450 – 25% of 600
= (30 / 100 × 200) + (20 / 100 × 450) – (25 / 100 × 600)
= (30 × 2) + (2 × 45) – (25 × 6)
We get,
= 60 + 90 – 150
= 150 – 150
= 0
(ii) 10% of Rs 450 – 12% of Rs 500 + 8% of Rs 500
= (10 / 100 × 450) – (12 / 100 × 500) + (8 / 100 × 500)
= (1 × 45) – (12 × 5) + (8 × 5)
We get,
= 45 – 60 + 40
= 85 – 60
= Rs 25