Conceptual Practice | Percentages | Dr. Kiran Derle

1. If the price of petrol is increased by 20% and subsequently by 40%. If the original price was Rs25 per litre then what is then the final price per litre?

a. 42 b. 45
c. 48 d. 40

Solution: When Rs.25 increased by 20%, it becomes 25 + 5 = 30. Now, 30 increased by 40% so 30 + 12 = 42

Alternate way:

Final Price = 25 x (1 + 20/100) x (1 + 40/100)
= Rs.25 x 1.2 x 1.4
= Rs. 42

2. If 35% of a number is 112, then the number is

a. 380 b. 300
c. 320 d. 35

Solution: Let the number be y.
Then, 35% of y = 112
(35 / 100)y = 112
y = (112 x 100) / 35
= 320

Alternate Solution:

35% of the number ------ 112
100% of the number ----- ?
You get 320 by cross multiplication.

3. 75 % of a number when added to 75 is equal to that number. What is the number?

a. 280 b. 400
c. 300 d. 305

Solution: Let 'x' be the required number
0.75x + 75 =x
∴ 0.25x=75
∴ x=75 / 0.25 =300

4. What percentage of 2/7 is 1/35 ?

a. 2.5% b. 10%
c. 25% d. 20%

Solution: Let N% of 2/7 is 1/35
∴ (N /100) * 2/7 = 1/35
⇒ N = 1/35 x 7/2 x 100 = 10%

5. What percent of 7.2 kg is 18 gms ?

a. 0.025% b. 0.25%
c. 2.5% d. 25%

Solution: 7.2 kg = 7.2 x 1000 gm = 7200 gms
Required percentage = (18/7200) x 100 % = 0.25%

6. ?% of 130 = 10.4 ?

a. 80 b. 8
c. 0.8 d. 0.08

Solution: Let Y% of 130 = 10.4
⇒ (Y x 130) / 100 = 10.4
∴ Y = (10.4 x 100) / 130 = 8

7. What percent is 3% of 5% ?

a. 15% b. 1.5%
c. 0.15% d. None of these

Solution: Lets say x% of 5% is 3%
So, x/100 * 5/100 = 3/100
x = 60 i.e. 60%

8. The income of a broker remains unchanged though the rate of commission is increased from 4% to 5%. The percentage of slump in business is ?

a. 8% b. 1%
c. 20% d. 80%

Solution: Lets say initial business is Rs.100x.
Commission was Rs.4x (i.e. 4% of 100x)
Now, income of broker is unchanged i.e. Rs. 4x only. But commission is 5%.
So, 5% of new income = 4x
Hence, new income = Rs. 80x. There is slump/drop of 20% in the business.

Alternate Approach:

Let the business value change from A to B.
Then, 4% of A = 5% of B
⇒ 4A/100 = 5B/100
⇒ B = 4A/5
∴ change in business = (A - 4A/5) = A/5
Percentage slump in business = {(A/5)/A} x 100 % = 20%

9. A man spends Rs. 3500 per month and saves 12.5% of his income. His monthly income is?

a. Rs. 4400 b. Rs. 4270
c. Rs. 4000 d. Rs. 3937.50

Solution: If his saving is 12.5 of Income, Spending is 87.5% of income
87.5 % of P = 3500
⇒ P = (3500 x 2 x 100) / 175 = 4000

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10. A fruit seller had some apples. He sells 40% and still has 420 apples. Originally, he had ?

a. 588 apples b. 600 apples
c. 672 apples d. 700 apples

Solution: He sells 40% of total apples (N), so he left with 60% of total apples (N).
∴ 60% of N = 420
∴ N = (420 x 100)/60 = 700

11. The price of rice has increased by 60%. In order to restore to the original price, the new price must be reduced by ?

a. 33 1/3% b. 37 1/2%
c. 40% d. 45%

Solution: Let original price = Rs.100x
⇒ Increased price = Rs. 160x
In order to restore to original price, we have decrease 160x by 60x.
∴ Decrease on Rs. 100 = (60/160) x 100 % = 37 1/2%
(Mind it: 60x is actually 60% of 100x but 37.5% of 160x)

12. One litre of water is evaporated from 6 litre of a solution containing 5% salt. The percentage of salt ?

a. 4 4/19% b. 5 5/7%
c. 5% d. 6%

Solution: Salt in 6 liters = 5% of 6 liters = 0.30 liter
Now, new solution is only 5 liters as one liter of water got evaporated but the value of salt is still remains same.
Salt % in new solution of liters = (0.30/5) x 100% = 6%

13. A student is required to secure at least 50% marks in order to pass an examination. He secured 50 marks which were less than the minimum passing marks by 50. The maximum marks of the paper are ?

a. 200 b. 250
c. 275 d. 300

Solution: Minimum passing marks = 50 + 50 = 100
Let the total marks = x
Then, Passing marks = 50% of x = 100
⇒ x = (100/50) x 100 = 200

14. Two numbers X and Y are respectively 30% and 35% less than a third number Z . By what percentage is the number Y less than that of the number X?

a. 30% b. 15% c. 7 1/7% d. 20%

Solution: Let the third number Z be 100k.
X = 70k (30% less than Z)
Y = 65k (35% less than Z)
Hence, Y is 5k less than 70k (X).
In terms of % = 5k/70k * 100 = 7 1/7%

15. Mr. A spends 40 percent of his monthly income on food items and 50 percent of the remaining, on cloths and conveyance. He saves one-third of the remaining amount after spending on food, clothes and conveyance. If he saves Rs.19,200 every year, what is his monthly income ?

a. Rs. 24000 b. Rs. 12000
c. Rs. 16000 d. Rs. 20000

Solution: Lets Mr. A has Rs.100x. SO he spends on:
Food items = 40x
Clothes + conveyance = 50% of 60x = 30x
⇒ Remaining amount = (100x – 40x – 30x = 30x
His saving is 1/3rd of 30x
∴ 1/3 of 30x = 19200
⇒ 10x = 19200
∴ 100x = Rs. 192000
So his monthly income = 192000 / 12 = 16000

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