

CBSEASSISTANCE.COM

PERCENTAGE EXERCISE 9A

1. (i) $\frac{48}{100} = \frac{48 \div 4}{100 \div 4} = \frac{12}{25}$
(ii) $\frac{220}{100} = \frac{220 \div 20}{100 \div 20} = \frac{11}{5}$
(iii) $\frac{2.5}{100} = \frac{25}{1000} = \frac{25 \div 25}{1000 \div 25} = \frac{1}{40}$

2. (i) $\frac{6}{100} = 0.06$
(ii) $\frac{72}{100} = 0.72$
(iii) $\frac{125}{100} = 1.25$

3. (i) $\frac{9}{25} \times 100 = 36\%$
(ii) $\frac{3}{125} \times 100 = \frac{12}{5} = 2.4\%$
(iii) $\frac{12}{5} \times 100 = 240\%$

4. $\frac{4}{5} \times 100 = 4 \times 20 = 80\%$

5. $\frac{125}{100} = \frac{125 \div 25}{100 \div 25} = \frac{5}{4} = 5 : 4$

6. $6\frac{2}{3}\% = 6.67\%$ (approximately)

$$\frac{3}{20} \times 100 = 15\%$$

$$0.14 \times 100 = 14\%$$

$$15 > 14 > 6.67$$

Hence, $\frac{3}{20}$ is the largest.

7. (i) $\frac{96}{150} \times 100 = \frac{96}{3} \times 2 = 32 \times 2 = 64 \%$

(ii) $1 \text{ kg} = 1000 \text{ g}$

$5 \text{ kg} = 5 \times 1000 \text{ g} = 5000 \text{ g}$

$\frac{200}{5000} \times 100 = \frac{1}{25} \times 100 = 1 \times 4 = 4 \%$

(iii) $1 \text{ litre} = 1000 \text{ ml}$

$2 \text{ litres} = 2 \times 1000 \text{ ml} = 2000 \text{ ml}$

$\frac{250}{2000} \times 100 = \frac{25}{2} = 12.5 \%$

8. $4\frac{1}{2}\% \text{ of } 3600$

$= \frac{9}{2} \times \frac{1}{100} \times 3600$

$= 9 \times 18$

$= \text{Rs. } 162$

9. Let the number be x .

According to the given condition

$16\% \text{ of } x = 72$

$\frac{16}{100} \times x = 72$

$x = \frac{72 \times 100}{16}$

$x = 450$

\therefore Required number = 450

10. Let the monthly income be Rs. x

Saving = 18 % of Rs. x

According to the given condition

$18\% \text{ of } Rs. x = 3780$

$\frac{18}{100} \times x = 3780$

$x = \frac{3780 \times 100}{18}$

$x = 210 \times 100$

$x = 21000$

\therefore Monthly income = Rs. 21000

11. Let total number of games played = x

Number of games won = 35 % of x

According to the given condition

$$35 \% \text{ of } x = 7$$

$$\frac{35}{100} \times x = 7$$

$$x = \frac{7}{35} \times 100$$

$$x = 20$$

\therefore Total number of games played = 20

12. Let the salary before increment = Rs. x

$$\text{Increment in salary} = 20\% \text{ of Rs. } x = \frac{20}{100} \times x = \text{Rs. } \frac{x}{5}$$

$$\text{Increased salary} = x + \frac{x}{5} = \text{Rs. } \frac{6x}{5}$$

$$\frac{6x}{5} = 30600$$

$$x = \frac{30600 \times 5}{6}$$

$$x = 25500$$

\therefore Salary before increment = Rs. 25500

13. Let the number of days on which school was opened = x

Sonal's attendance = 85% of x

$$85\% \text{ of } x = 204$$

$$\frac{85}{100} \times x = 204$$

$$x = \frac{204 \times 100}{85}$$

$$x = 240$$

\therefore Number of days on which school was opened = 240

14. Let income of B = Rs. 100

$$\text{Income of A} = 100 - 20\% \text{ of } 100 = 100 - \frac{20}{100} \times 100 = 100 - 20 = \text{Rs. } 80$$

$$\text{Difference in income} = \text{Rs. } 100 - 80 = \text{Rs. } 20$$

$$\text{Required percentage} = \frac{20}{80} \times 100 = 25\%$$

15. Let the consumption of petrol originally be 1 unit and let its cost be Rs. 100

New cost of 1 unit = 100 + 10% of Rs. 100 = Rs. 110

Petrol bought for Rs. 110 = 1 unit

Petrol bought for Re. 1 = $\frac{1}{110}$ units

Petrol bought for Rs. 100 = $\frac{1}{110} \times 100 = \frac{10}{11}$ units

Reduction in consumption = $1 - \frac{10}{11} = \frac{11-10}{11} = \frac{1}{11}$ unit

Reduction in consumption = $\frac{1}{11} \times 100 = \frac{100}{11} \% = 9\frac{1}{11} \%$

16. Let the population of the town a year ago = x

Increase in population = 8% of $x = \frac{8x}{100}$

$$x + \frac{8x}{100} = 54000$$

$$\frac{108x}{100} = 54000$$

$$x = \frac{54000 \times 100}{108}$$

$$x = 50000$$

\therefore The population of the town a year ago = 50000

17. Let the value of machine last year = Rs. x

Depreciation in the cost = 20% of Rs. $x = Rs. \frac{20x}{100}$

$$x - \frac{20x}{100} = 160000$$

$$\frac{100x - 20x}{100} = 160000$$

$$\frac{80x}{100} = 160000$$

$$x = \frac{160000 \times 100}{80}$$

$$x = 200000$$

Value of machine last year = Rs. 200000

18. 1 kg = 1000 g

Percentage of copper in the alloy = 40%

Percentage of nickel in the alloy = 32%

Percentage of zinc in the alloy = $100 - (40 + 32) \% = 28 \%$

Mass of zinc in the alloy = $28\% \text{ of } 1000g = \frac{28}{100} \times 1000 = 280 \text{ grams}$

19. Amount of proteins = $12\% \text{ of } 2600 = \frac{12}{100} \times 2600 = 312 \text{ calories}$

Amount of fats = $25\% \text{ of } 2600 = \frac{25}{100} \times 2600 = 650 \text{ calories}$

Amount of carbohydrates = $63\% \text{ of } 2600 = \frac{63}{100} \times 2600 = 1638 \text{ calories}$

20. Let amount of gunpowder = $x \text{ kg}$

Amount of nitre = $75\% \text{ of } x = \frac{75}{100} \times x = \frac{3}{4}x \text{ kg}$

$$\frac{3}{4}x = 9$$

$$x = \frac{9 \times 4}{3}$$

$$x = 12$$

\therefore Amount of gunpowder = 12 kg

Let the amount of gunpowder that contains 2.5 kg sulphur = $y \text{ kg}$

Amount of sulphur = $10\% \text{ of } y = \frac{10}{100} \times y = \frac{y}{10} \text{ kg}$

$$\frac{y}{10} = 2.5$$

$$y = 25$$

\therefore Amount of gunpowder = 25 kg

21. Total amount = Rs. 7000

Let amount C gets = Rs. x

Amount B gets = $50\% \text{ of } x = \frac{50}{100} \times x = \text{Rs. } \frac{x}{2}$

Amount A gets = $50\% \text{ of } \frac{x}{2} = \frac{50}{100} \times \frac{x}{2} = \text{Rs. } \frac{x}{4}$

$$x + \frac{x}{2} + \frac{x}{4} = 7000$$

Multiplying both sides by 4

$$4x + 2x + x = 28000$$

$$7x = 28000$$

$$x = \frac{28000}{7}$$

$$x = 4000$$

∴ Amount C gets = Rs. 4000

$$\text{Amount B gets} = \frac{4000}{2} = \text{Rs. } 2000$$

$$\text{Amount A gets} = \frac{4000}{4} = \text{Rs. } 1000$$

22. 22 – carat gold contains 22 parts out of 24 parts

$$\text{Percentage of pure gold in it} = \frac{22}{24} \times 100 = \frac{275}{3}\% = 91\frac{2}{3}\%$$

23. Let the salary before increase = Rs. 100

$$\text{Increase in salary} = 25\% \text{ of } 100 = \text{Rs. } 25$$

$$\text{New salary} = 100 + 25 = \text{Rs. } 125$$

To restore the original salary, let the new salary be decreased by $x\%$

$$\text{Decrease in salary} = x\% \text{ of Rs. } 125 = \frac{x}{100} \times 125 = \text{Rs. } \frac{5x}{4}$$

$$\therefore 125 - \frac{5x}{4} = 100$$

$$125 - 100 = \frac{5x}{4}$$

$$\frac{25 \times 4}{5} = x$$

$$x = 20$$

∴ New salary is decreased by 20 %