RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1: The Physics Wallah academic team has produced a comprehensive answer for Chapter 9: Percentage of the RS Aggarwal class 8 textbook. The RS Aggarwal class 8 solution for chapter 9 Percentage Exercise-9A is uploaded for reference only; do not copy the solutions.

Before going through the solution of Chapter 9 Percentage Exercise-9A, one must have a clear understanding of the chapter 9 Percentage. Read the theory of chapter 9 Percentage and then try to solve all numerals of exercise-9A.

RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 Percentage Overview

RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 focuses on the concept of Percentages, a crucial mathematical topic with extensive real-world applications. Exercise 9.1 provides an introduction to percentages, helping students understand the relationship between fractions, decimals, and percentages, and how to convert between them.

In this exercise, students learn how to express a number as a percentage of another number and vice versa. The problems are designed to familiarize students with various percentage calculations, including finding percentages of given quantities and determining the percentage increase or decrease between two values.

RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 (Ex 9A)

Below we have provided RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 Percentage –

Question (1) Express each of the following as a fraction:

$$\text{(i) } 48\% = \frac{48}{100} = \frac{12}{25}$$

$$\text{(ii) } 220\% = \frac{220}{100} = \frac{11}{5}$$

$$\text{(iii) } 2.5\% = \frac{2.5}{100} = \frac{25}{1000} = \frac{1}{40}$$

Question (2) Express each of the following as a decimal:

$$\text{(i) } 6\% = \frac{6}{100} = 0.06$$

$$\text{(ii) } 72\% = \frac{72}{100} = 0.72$$

$$\text{(iii) } 125\% = \frac{125}{100} = 1.25$$

Question (3) Express each of the following s a percentage:

$$\text{(i) } \frac{9}{25} = \left(\frac{9}{25} \times 100\right)\% = 36\%$$

$$\text{(ii) } \frac{3}{125} = \left(\frac{3}{125} \times 100\right)\% = \frac{12}{5}\% = 2.4\%$$

$$\text{(iii) } \frac{12}{5} = \left(\frac{12}{5} \times 100\right)\% = 240\%$$

Question (4) Convert the ratio 4 : 5 to percentage.

$$\text{Solution: } 4 : 5 = \frac{4}{5} = \left(\frac{4}{5} \times 100\right)\% = 80\%$$

Question (5) Express 125% as a ratio.

Solution: $125\% = \frac{125}{100} = \frac{5}{4} = 5 : 4$

(6) Which is largest in $6\frac{2}{3}\%$, $\frac{3}{20}$ and 0.14?

Solution: We may write,

$$6\frac{2}{3}\% = \frac{20}{3}\% = \left(\frac{20}{3} \times \frac{1}{100}\right) = \frac{1}{15} = 0.067.$$

$\frac{3}{20} = 0.15$ and third number is 0.14.

Clearly, 0.15 is the largest.

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

Question (7)(i) What per cent of 150 is 96?

(ii) What per cent of 5 kg is 200 g?

(iii) What per cent of 2 litres is 250 ml?

Solution: (i) Required percentage = $\left(\frac{96}{150} \times 100\right)\% = 64\%$

(ii) Here 5 kg = 5000 g

Required percentage = $\left(\frac{200}{5000} \times 100\right)\% = 4\%$

(iii) Here, 2 litres = 2000 mL

Required percentage = $\left(\frac{250}{2000} \times 100\right)\% = \frac{25}{2}\% = 12.5\%$

(8) Find $4\frac{1}{2}\%$ of Rs 3600.

Solution: Rs $\left(\frac{9}{2} \times \frac{1}{100} \times 3600\right) = Rs\ 162.$

Question (9) If 16% of a number is 72, find the number.

Solution: Let the required number be x. Then,

16% of x = 72

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

$\Rightarrow 16x = 7200$

$\Rightarrow x = 450$

Hence, the required number is 450.

Question (10) A man saves 18% of his monthly income. If he saves Rs 3780 per month, what is his monthly income?

Solution: Let his monthly income be Rs x.

$$\text{Money saves} = \text{Rs}\left(\frac{18}{100} \times x\right)$$

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

$$\Rightarrow 18x = 378000$$

$$\Rightarrow x = 21000$$

Hence, the monthly income of the man is Rs 21000.

Question (11) A football team wins 7 games, which is 35% of the total games played. How many games were played in all?

Solution: Let the number of playing game be x.

$$\text{The team wins games} = \left(\frac{35}{100} \times x\right)$$

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

$$\Rightarrow 35x = 700$$

$$\Rightarrow x = 20$$

Hence, the team 20 games were played in all.

Question (12) Amit was given an increment of 20% on his new salary is Rs 30600, what was his salary before the increment?

Solution: Let Amit's salary before his increment be Rs x.

$$\text{Now, increment of his salary} = \text{Rs}\left(\frac{20}{100} \times x\right)$$

$$\text{After increment his salary is} = \text{Rs}\left(x + \frac{20x}{100}\right)$$

$$\therefore x + \frac{20x}{100} = 30600$$

$$\Rightarrow \frac{100x+20}{100} = 30600$$

$$\Rightarrow 120x = 3060000$$

$$\Rightarrow x = 25500$$

Question (13) Sonal attended her school on 204 days in full year. If her attendance is 85%, find the number of days on which the school was opened.

Solution: Let the numbers of days on which the school was opened be x days.

Then, (85/100)×x

⇒ 85x = 20400

⇒ x = 240

Hence, the number of days which Sonal's school was opened is 240 days.

Question (14) A's income is 20% less than that B. By what per cent is B's income more than A's?

Solution: Let B's income be Rs 100.

Then, A's income = Rs (100 – 20) = Rs 80.

If A's income is Rs 80, then B's income = Rs 100.

If A's income is Rs 100, then B's income = Rs [(100/80)×100]=Rs 125.

∴ B's income more than A's income by (125 – 100) = 25%.

Question (15) The price of petrol goes up by 10%. By how much per cent must a motorist reduce the consumption of petrol so that expenditure on it remains unchanged?

Solution: Let the consumption of petrol originally be 1 and let its cost be Rs 100.

New cost of 1 unit = Rs 110.

Now, Rs 110 yield 1 unit of petrol.

$$\therefore \text{Rs } 100 \text{ will yield } \left(\frac{1}{110} \times 100\right) unit = \frac{10}{11} \; unit \; of \; petrol$$

$$\text{Reduction in consumption} = \left(1 - \frac{10}{11}\right) = \frac{1}{11} \text{ unit}$$

$$\therefore \text{Reduction \% in consumption} = \left(\frac{1}{11} \times \frac{1}{1} \times 100\right)\% = 9\frac{1}{11}\%$$

Question (16) The population of a town increases by 8% annually. If the present population is 54000, what was it a year ago?

Solution: Let the population of the town a year ago be x.

$$\text{Then, its present population} = 108\% \text{ of x} = \left(x \times \frac{108}{100}\right) = \frac{27x}{25}$$

$$\therefore \frac{27x}{25} = 54000$$

$$\Rightarrow 27\text{x} = 1350000$$

$$\Rightarrow \text{x} = 50000$$

$$\text{Hence, the population of the town a year ago was } 50000.$$

Question (17) The value of a machine depreciates every year by 20%. If the present value of the machine be Rs 160000, what was its value last year?

Solution: Let the value of the machine last year be Rs x.

$$\text{Then, its present value} = 80\% \text{ of Rs x} = Rs\left(\frac{80}{100} \times x\right) = Rs\ \frac{4x}{5}$$

$$\therefore \frac{4x}{5} = 160000$$

$$\Rightarrow 4x = 800000$$

$$\Rightarrow x = 200000$$

$$\therefore \text{Value of the machine last year} = \text{Rs } 200000.$$

Question (18) An alloy contains 40% copper, 32% nickel and rest zinc. Find the mass of zinc in one kg of the alloy.

Solution: mass of the alloy = 1 kg = 1000 g

Sum of percentage of the copper and nickel = (40 + 32) % = 72%

∴ Percentage of zinc = (100 – 72)% = 28%

∴ Mass of the zinc in 1 kg alloy = [(28/100)×1000]g=280 g.

Question (19) Balanced diet should contain 12% of proteins, 25% of fats and 63% of carbohydrates. If a child needs 2600 calories in his food daily, find in calories the amount of each of these in his daily food intake.

$$\text{Solution: Proteins} = \left(\frac{12}{100} \times 2600\right) = 312\ calories$$

$$\text{Fats} = \left(\frac{25}{100} \times 2600\right) = 650\ calories$$

$$\text{Carbohydrates} = \left(\frac{63}{100} \times 2600\right) = 1638\ calories$$

Question (20) Gunpowder contains 75% nitre and 10% sulphur. Find the amount of gunpowder which carries 9 kg nitre. What amount of gunpowder would contain 2.5 kg sulphur?

Solution: Let the amount of the gunpowder be x.

Now, x kg be the amount of gunpowder containing 9 kg of nitre.

$$\therefore \frac{75}{100} \times x = 9$$

$$\Rightarrow 75x = 900$$

$$\Rightarrow x = 12$$

Hence, 12 kg of gunpowder contains 9 kg of nitre.

Now, x kg be the amount of gunpowder containing 2.5 kg of sulphur.

$$\therefore \frac{10}{100} \times x = 2.5$$

$$\Rightarrow 10x = 250$$

$$\Rightarrow x = 25 \text{ kg}$$

Hence, 25 kg of gunpowder contains 2.5 kg sulphur.

Question (21) Divide Rs 7000 among A, B and C such that A gets 50% of what B gets 50% of what C gets.

Solution: Let Rs x be the amount of money received by C.

$$\text{Then, amount of money B gets} = \text{Rs } \frac{50x}{100}$$

$$\text{And, amount of money A gets} = 50\% \text{ of B}$$

$$= \text{Rs } \frac{25x}{100}$$

$$\text{Now } x + 50\% \text{ of Rs } x + 25\% \text{ of Rs } x$$

$$\Rightarrow x + \frac{50x}{100} + \frac{25x}{100} = 7000$$

$$\Rightarrow \frac{100x+50x+25x}{100} = 7000$$

⇒ 175x = 700000

⇒ x = 40000

∴ C get Rs 4000.

$$\text{Therefore, B gets} = Rs\ \left(\frac{50}{100} \times 4000\right) = Rs\ 2000$$

$$\text{A gets} = Rs\ \left(\frac{25}{100} \times 4000\right) = Rs\ 1000$$

Question (22) Find the percentage of pure gold in 22 carat gold, if 24-carat gold is 100% pure.

Solution: Percentage of pure gold in 22 carat gold $= \left(\frac{22}{24} \times 100\right)\%$

$= 91\frac{2}{3}\%$

Hence, 22 carat gold contains $91\frac{2}{3}\%$ of pure gold.

Question (23) The salary of an officer is increased by 25%, By what per cent should the new salary be decreased to restore the original salary?

Solution: Let the salary be Rs 100.

Then, after increased by 25% the salary $= 100\left(1 + \frac{25}{100}\right)$

$= 100 \times \frac{125}{100} = Rs\ 125$

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

$\therefore 125\left(1 - \frac{x}{100}\right) = 100$

$\Rightarrow 125 \times \left(\frac{100-x}{100}\right) = 100$

$\Rightarrow \frac{100-x}{100} = \frac{100}{125}$

$\Rightarrow 100 - x = \frac{10000}{125}$

$\Rightarrow -x = 80 - 100$

$\Rightarrow -x = -20$

$\Rightarrow x = 20$

Therefore, the new salary be decreased to restore the original salary by 20%.

Benefits of RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1

Here are some key benefits of using RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 Percentage:

Conceptual Clarity: The RS Aggarwal Solutions for Class 8 Maths Chapter 9 Exercise 9.1 provide clear explanations and step-by-step guidance on the concept of percentages, making it easier for students to understand how percentages relate to fractions and decimals.

Real-World Application: Students learn to apply percentages in practical situations such as calculating discounts, profit and loss, and interest rates, enhancing their ability to use math in everyday life.

Improved Problem-Solving Skills: By working through a variety of problems, students develop their problem-solving skills, learning how to approach and solve percentage-related questions systematically.

Strong Foundation for Future Topics: Understanding percentages is crucial for mastering other mathematical concepts, such as ratios, proportions, and algebra. The solutions help build a strong foundation for these topics.

Confidence Building: As students practice and succeed in solving percentage problems, they gain confidence in their mathematical abilities, encouraging a positive attitude towards learning math.

Exam Preparation: The solutions align with the curriculum and exam patterns, providing students with the practice they need to prepare effectively for tests and assessments.