

Fractions of an Amount Exam Practice



Q1. Find $\frac{3}{4}$ of 72

Answer: 54
(1 mark)

Q2. Find $\frac{2}{5}$ of 140

Answer: 56
(1 mark)

Q3. Find $\frac{1}{11}$ of £7700

Answer: £700
(1 mark)



Q4. Work out $\frac{3}{25}$ of £750

Answer: £90
(1 mark)

Find the original amount, given a fraction of it

Q5. Kay is thinking of a number. If $\frac{2}{5}$ of the number is 60, work out what number Kay is thinking about.

$$\frac{2}{5} = 60$$

$$\frac{1}{5} = 30$$

$$\Rightarrow 150$$

Answer: 150
(2 marks)

Q6. Tom is thinking of a number. If $\frac{4}{7}$ of the number is 360, work out what number Tom is thinking about.

$$\frac{4}{7} = 360$$

$$\frac{1}{7} = 90$$

$$\Rightarrow 630$$

Answer: 630
(2 marks)



Q7. At a golf club, $\frac{2}{3}$ of their supply of golf balls have been lost. If they have 150 balls left, work out the total number of balls they originally had.

$$\frac{1}{3} \text{ left ; } \frac{1}{3} = 150$$
$$\Rightarrow 450$$

Answer: 450
(2 marks)

Q8. At a local election, $\frac{5}{8}$ of the people voted for Mr. Davies. If 54 people did not vote for him, work out how many people were at the election.

$$\frac{3}{8} \text{ did not vote ; } \frac{3}{8} = 54$$
$$\frac{1}{8} = 18$$
$$\Rightarrow 144$$

Answer: 144
(2 marks)



Fraction of a fraction questions

Q9. If $\frac{1}{2}$ of the class ate chips for lunch, and $\frac{3}{4}$ of these pupils had dessert, what fraction of the class had chips and a dessert for lunch?

$$\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

Answer: $\frac{3}{8}$
(3 marks)

Q10. In a box of rings, $\frac{3}{4}$ of all the rings are silver, and $\frac{1}{5}$ of these rings have red stones in them. What fraction of the rings are silver with red stones?

$$\frac{3}{4} \times \frac{1}{5} = \frac{3}{20}$$

Answer: $\frac{3}{20}$
(3 marks)



Q11. In a sixth form, $\frac{2}{5}$ of all the pupils are male. Of those who are female, $\frac{1}{6}$ of them are studying German.

What fraction of the sixth form are female and studying German?

$$\frac{3}{5} \times \frac{1}{6} = \frac{3}{30}$$
$$= \frac{1}{10}$$

Answer: $\frac{1}{10}$
(3 marks)

Problem Questions:

Q12. Roger spends $\frac{3}{8}$ of his monthly salary on rent, $\frac{1}{5}$ on bills, and $\frac{1}{10}$ on food. If he spends £1610 on rent and bills, find how much he spends on food.

$$\frac{3}{8} + \frac{1}{5} = \frac{1610}{\text{Salary}}$$

$$\frac{23}{40} = \frac{1610}{\text{Salary}}$$

$$\Rightarrow \text{Salary} = £2800$$

$$\text{Food} = \frac{1}{10} \times 2800$$
$$= 280$$

Answer: £280
(4 marks)



Q13. A bus company offers $\frac{1}{5}$ off a ticket which usually costs £72. Pete is allowed to buy the ticket using this offer and his railcard, which allows him a further discount of $\frac{1}{3}$. How much will he pay for the ticket?

$$\begin{aligned} \bullet \text{ Bus company offer is } & \frac{4}{5} \times 72 \\ & = 57.60 \end{aligned}$$

$$\begin{aligned} \bullet \text{ Railcard is } & \frac{2}{3} \times 57.60 \\ & = 38.40 \end{aligned}$$

Answer: £38.40
(3 marks)

Q14. There are 1300 students at a school in Arnford. 210 students are in the sixth form and the rest are in years 7 to 11. Of the pupils in the sixth form, $\frac{2}{15}$ are from Arnford whilst of the rest of the school, $\frac{7}{10}$ live outside Arnford.

Work out the number of pupils in the school who are from Arnford.

$$\begin{aligned} \bullet \text{ Years 7+11 } & = 1300 - 210 \\ & = 1090 \end{aligned}$$

$$\bullet \frac{3}{10} \times 1090 = 327$$

$$\bullet \frac{2}{15} \times 210 = 28$$

$$\begin{aligned} \text{Total from Arnford} & = 327 + 28 \\ & = 355 \end{aligned}$$

Answer: 355
(4 marks)



Q15. Each year a caravan loses value so that it is worth $\frac{5}{12}$ of what it did in the previous year. Work out how many years it will be until it is worth less than 1% of its original value?

$$\text{Year 1: } \frac{5}{12} > \frac{1}{100}$$

$$\text{Year 2: } \frac{5}{12} \times \frac{5}{12} = \frac{25}{144} > \frac{1}{100} \quad \text{or compare } (0.41\bar{6})^2 \text{ vs } 0.01$$

$$\text{Year 3: } \frac{5}{12} \times \frac{5}{12} \times \frac{5}{12} = \frac{125}{1728} > \frac{1}{100}$$

$$\text{Year 6: } \left(\frac{5}{12}\right)^6 < \frac{1}{100}$$

Answer: 6 years
(3 marks)

Q16. A panda is weighed in January and again in March. In March, it weighs 115 kg which is found to be an increase of $\frac{5}{12}$ of its original weight. How much did it weigh in January, to the nearest kg?

$$1 + \frac{5}{12} = \frac{17}{12}$$

$$\frac{17}{12} = 115 \text{ kg} \quad \Rightarrow \quad \frac{1}{12} \text{ of Tanny's weight} = \frac{115}{17}$$

$$\text{January: } 81.18 \text{ kg}$$

Answer: 81 kg
(3 marks)



Q17. David gave $\frac{2}{3}$ of his savings to his brother Steve, who then gave $\frac{4}{9}$ of this to charity. If Steve gave £1600 to charity, work out how much money Dave gave to Steve.

$$\bullet \frac{4}{9} \text{ of Steve's} = \text{£}1600$$

$$\Rightarrow \text{Steve's} = \text{£}3600$$

$$\bullet \frac{2}{3} \text{ of Dave's} = \text{£}3600$$

$$\bullet \text{Dave's money} = \text{£}5400$$

Answer: £ 5400
(3 marks)

Q18. Sarah's monthly takings at her shop have been the same since the start of the year, until April, when they increased by $\frac{2}{7}$. Then in May, they decreased by $\frac{1}{5}$. Compared to the start of the year, have Sarah's takings increased or decreased? You must show your working.

Let x = start of year.

$$\text{April: } x \times \left(1 + \frac{2}{7}\right) = \frac{9}{7}x$$

$$\text{May: } \left(\frac{9}{7}x\right) \times \frac{4}{5} = \frac{36x}{35}$$

$\frac{36x}{35} > x$ so overall the takings have increased

Answer: increased
(4 marks)