Fractions

Maths Level 2 Exam-style practice · 12 questions · 33 marks · Non-calculator

Remember

Fraction of an amount: divide by the bottom, multiply by the top. $\frac{3}{5}$ of £240 = 240 ÷ 5 × 3 = **£144**.

Equivalent fractions: multiply or divide top and bottom by the same number: $\frac{6}{8} = \frac{3}{4}$. To compare $\frac{2}{3}$ and $\frac{3}{5}$, use a common denominator: $\frac{10}{15}$ and $\frac{9}{15}$.

Adding and subtracting: same denominator first. $\frac{1}{4} + \frac{1}{6} = \frac{3}{12} + \frac{2}{12} = \frac{5}{12}$.

Mixed numbers: $2\frac{3}{4} = \frac{11}{4}$. **One quantity as a fraction of another:** 18 out of 24 = $\frac{18}{24} = \frac{3}{4}$.

Section A – Fraction of an amount

1. Work out: (a) $\frac{2}{3}$ of 96 (b) $\frac{3}{8}$ of £560 (c) $\frac{5}{6}$ of 4.2 kg (d) $\frac{7}{10}$ of 3 hours (answer in minutes) (4 marks)

2. A college has 1,240 students. $\frac{3}{8}$ study part-time. How many students study full-time? (2 marks)

3. Dan earns £2,160 a month. He spends $\frac{2}{5}$ on rent and $\frac{1}{6}$ on food. How much is left for everything else? (3 marks)

Section B – Equivalence and comparing

4. Simplify fully: (a) $\frac{12}{18}$ (b) $\frac{45}{60}$ (c) $\frac{28}{42}$ (3 marks)

5. In a survey, 18 out of 30 people in Ashby and 25 out of 40 in Brookford said they cycle to work. Which town has the higher fraction of cyclists? Show your working. (3 marks)

6. Three shops offer discounts: 'a third off', '$\frac{3}{10}$ off' and '$\frac{3}{8}$ off'. Put them in order from smallest to biggest discount. (2 marks)

7. A recipe needs ¾ of a 900 g bag of flour. A second recipe needs ⅝ of a 1.2 kg bag. Which uses more flour? (3 marks)

Section C – Adding, subtracting and mixed numbers

8. A decorator uses ²⁄₅ of a tin of paint on Monday and ⅓ on Tuesday. What fraction of the tin is left? (2 marks)

9. Amara works 3½ hours on Saturday and 2¾ hours on Sunday. How many hours in total? Give your answer as a mixed number and in hours and minutes. (3 marks)

10. A 5¼-metre length of cable has 1⅝ metres cut off. How much is left? (2 marks)

11. Of the 48 pupils in Year 6, ⅓ walk to school, ¼ come by car and the rest by bus. How many come by bus? (3 marks)

12. A tank is ⅝ full. After 150 litres are used it is ⅜ full. How much does the tank hold when full? (3 marks)

Fractions – Answers

Level 2 · Working shown so you can check your method, not just the final number.

Section A

1. (a) 96 ÷ 3 × 2 = **64** (b) 560 ÷ 8 × 3 = **£210** (c) 4.2 ÷ 6 × 5 = **3.5 kg** (d) 180 ÷ 10 × 7 = **126 minutes**.
2. Part-time = 1,240 ÷ 8 × 3 = 465. Full-time = 1,240 − 465 = **775**. (Or $\frac{5}{8}$ of 1,240.)
3. Rent = 2,160 ÷ 5 × 2 = £864. Food = 2,160 ÷ 6 = £360. Left = 2,160 − 864 − 360 = **£936**.

Section B

4. (a) $\frac{2}{3}$ (b) $\frac{3}{4}$ (c) $\frac{2}{3}$.
5. Ashby $\frac{18}{30} = \frac{3}{5} = \frac{6}{10}$. Brookford $\frac{25}{40} = \frac{5}{8}$. Common denominator 40: $\frac{24}{40}$ and $\frac{25}{40}$. **Brookford** has the higher fraction (just). Decimals also fine: 0.6 vs 0.625.
6. Denominator 120: $\frac{1}{3} = \frac{40}{120}$, $\frac{3}{10} = \frac{36}{120}$, $\frac{3}{8} = \frac{45}{120}$. Order: $\frac{3}{10}$, $\frac{1}{3}$, $\frac{3}{8}$.
7. ¾ × 900 = 675 g. $\frac{5}{8}$ × 1,200 = 750 g. **The second recipe** uses more.

Section C

8. $\frac{2}{5} + \frac{1}{3} = \frac{6}{15} + \frac{5}{15} = \frac{11}{15}$ used. Left = $\frac{4}{15}$.
9. 3 + 2 = 5 hours; ½ + ¾ = $\frac{5}{4}$ = 1¼. Total **6¼ hours** = **6 hours 15 minutes**.
10. 5¼ − 1⅝ = $\frac{42}{8} - \frac{13}{8} = \frac{29}{8}$ = **3⅝ metres**.
11. Walk = 16, car = 12, so bus = 48 − 28 = **20**. (⅓ + ¼ = $\frac{7}{12}$, so $\frac{5}{12}$ of 48 = 20.)
12. $\frac{5}{8} - \frac{3}{8} = \frac{2}{8}$ = ¼ of the tank = 150 litres, so full tank = **600 litres**.

Where Level 2 students lose marks on this topic

- Adding numerators and denominators separately ($\frac{2}{5} + \frac{1}{3} = \frac{3}{8}$). Find a common denominator first.
- Finding the fraction that was asked about instead of the one the question wants – working out the part-time students when it asked for full-time.
- Not simplifying, or leaving an answer as $\frac{11}{4}$ hours when the question asks for hours and minutes.