Fractions, Decimals and Percentages

Maths | Level 2 | Exam-style practice · 11 questions · 33 marks · Calculator allowed

Remember

Fraction → decimal: divide top by bottom. $\frac{3}{8} = 3 \div 8 = 0.375$. **Decimal → percentage:** × 100. 0.375 = 37.5%.

Percentage → fraction: over 100 and simplify. $45\% = \frac{45}{100} = \frac{9}{20}$. **Fraction → percentage:** make the bottom 100, or convert to a decimal first.

Learn these: $\frac{1}{2} = 0.5 = 50\%$ $\frac{1}{4} = 0.25 = 25\%$ $\frac{3}{4} = 0.75 = 75\%$ $\frac{1}{5} = 0.2 = 20\%$ $\frac{1}{3} \approx 0.333 = 33\frac{1}{3}\%$ $\frac{1}{8} = 0.125 = 12.5\%$ $\frac{1}{10} = 0.1 = 10\%$.

To compare a mix, convert everything to the same form – decimals are usually quickest.

Section A – Conversions

1. Complete the table.

Fraction	Decimal	Percentage
$\frac{3}{5}$		
	0.45	
		12.5%
$\frac{7}{20}$		
	0.04	
		$66\frac{2}{3}\%$

(6 marks)

2. Write $\frac{5}{16}$ as a decimal and as a percentage. (2 marks)

3. Write 0.875 as a fraction in its simplest form. (1 mark)

Section B – Comparing and ordering

4. Put in order, smallest first: 0.6, $\frac{5}{8}$, 58%, $\frac{7}{12}$, 0.615 (3 marks)

5. Three shops sell the same £80 jacket. Shop A: ⅕ off. Shop B: 18% off. Shop C: £14 off. Which is cheapest? Show your working. (3 marks)

6. In a mock test, Aisha scored 27 out of 40, Ben scored 0.7 of the marks and Chloe scored 68%. Who did best? (3 marks)

7. A tank is 0.45 full. Another identical tank is ⅘ full. Which has more water in it? (2 marks)

Section C – In context

8. A survey of 240 staff found that ⅖ walk to work, 30% drive and 0.15 cycle. The rest use the bus. How many use the bus? (4 marks)

9. A sofa is priced at £640. In a sale it is ¾ of the price. The following week it is reduced by a further 10%. What is the final price? (3 marks)

10. Out of 1,600 parcels, 0.035 arrived late. Write this as a percentage and work out how many parcels were on time. (3 marks)

11. A café's takings were £1,260 on Saturday. Sunday's takings were ⅞ of Saturday's, and Monday's were 45% of Saturday's. What were the total takings for the three days? (3 marks)

Fractions, Decimals and Percentages – Answers

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

Section A

1. ⅗ = 0.6 = 60% · ⁹⁄₂₀ = 0.45 = 45% · ⅛ = 0.125 = 12.5% · ⁷⁄₂₀ = 0.35 = 35% · ¹⁄₂₅ = 0.04 = 4% · ⅔ = 0.667 = 66⅔%.
2. 5 ÷ 16 = **0.3125 = 31.25%**.
3. ⁸⁷⁵⁄₁₀₀₀ = **⅞**.

Section B

4. As decimals: 0.6, 0.625, 0.58, 0.583, 0.615. Order: **58%, ⁷⁄₁₂, 0.6, 0.615, ⅝**.
5. A: 80 − 16 = £64. B: 80 × 0.82 = £65.60. C: £66. **Shop A** is cheapest.
6. Aisha 27 ÷ 40 = 0.675 (67.5%). Ben 0.7 (70%). Chloe 0.68 (68%). **Ben** did best.
7. ⁴⁄₉ = 0.444... < 0.45, so the **0.45 tank** has more.

Section C

8. Walk 0.4 + drive 0.3 + cycle 0.15 = 0.85, so bus = 0.15. 0.15 × 240 = **36 people**. (Check: 96 + 72 + 36 + 36 = 240.)
9. 640 × 0.75 = 480. 480 × 0.9 = **£432**.
10. 0.035 = **3.5%**. Late = 56, so **1,544 on time**.
11. Sunday 1,260 × ⅞ = 1,102.50. Monday 1,260 × 0.45 = 567. Total = **£2,929.50**.

Where Level 2 students lose marks on this topic

- Comparing a fraction with a percentage by eye – ⅝ 'looks' smaller than 60% but is 62.5%. Convert first.
- Mixing up '¾ of the price' with '¾ off'. Read whether the fraction is what you pay or what you save.
- Converting a fraction to a percentage by multiplying by the wrong number – ⁷⁄₂₀: make the denominator 100 (× 5) so it is 35%, not 7%.