FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

R3: Fractions of quantities

Solve problems expressing one quantity as a fraction of another

20 marks · 25 minutes · Non-calculator

1) Of 30 students, 12 walk to school. $\frac{1}{3}$ of the rest come by bus and the others come by car. What fraction of the class comes by car?

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[Question 1: 3 marks]

2) Jo spends $\frac{2}{5}$ of her money on clothes and $\frac{1}{4}$ of the remainder on food. What fraction of her money is left?

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[Question 2: 3 marks]

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3) A team has won 18 of its 30 games. How many more games must it win in a row so that it has won $\frac{2}{3}$ of its games?

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[Question 3: 3 marks]

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4) A film lasts 2.5 hours. Sam has watched 45 minutes. What fraction of the film is left?

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[Question 4: 2 marks]

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5) A tank holds 240 litres and contains 90 litres. What fraction is full? How many more litres are needed to make it $\frac{3}{4}$ full?

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[Question 5: 3 marks]

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6) Sam's bag has a mass of 750 g and Ann's has a mass of 1.2 kg. Write Sam's mass as a fraction of Ann's.

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[Question 6: 2 marks]

7) Ann runs 12 laps in 20 minutes. Ben runs 15 laps in 24 minutes. Who runs faster? Show your working.

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[Question 7: 2 marks]

8) Write the area of a 6 cm square as a fraction of the area of an 8 cm by 5 cm rectangle.

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[Question 8: 2 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	$\frac{2}{5}$	Rest 18 (P1); bus 6, car 12 (P1); $\frac{12}{30}$ (A1).
2	$\frac{9}{20}$	Left $\frac{3}{5}$ (P1); food $\frac{3}{20}$ (P1); A1.
3	6	$\frac{18+x}{30+x} = \frac{2}{3}$ (P1, P1); A1.
4	$\frac{7}{10}$	105 out of 150 minutes (P1); A1.
5	$\frac{3}{8}$; 90	$\frac{90}{240}$ (A1); 180 needed (P1); 90 (A1).
6	$\frac{5}{8}$	$\frac{750}{1200}$ (P1); A1.
7	Ben	0.6 and 0.625 laps per minute (P1); A1.
8	$\frac{9}{10}$	36 and 40 (P1); A1.