Name:

Maths Assessment Year 6 Term 2: Ratio and Proportion

1. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.

2. Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.

3. Solve problems involving similar shapes where the scale factor is known or can be found.

4. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

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Maths Assessment Year 6 Term 2: Ratio and Proportion

1. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.

a) Two medium pizzas cost £13.

Calculate the cost of 7 medium pizzas.

1 mark

b) Five tickets to the zoo cost £27.50.

Calculate the cost of 3 tickets to the zoo.

1 mark

c) Here are the ingredients for apple and blackberry compote:

300g apples
30g unsalted butter
30g sugar
120g blackberries
$\frac{1}{4}$ tsp cinnamon

Jacob collects 210g of blackberries. How much apple will he need to make compote using all the blackberries with this recipe?

2. Solve problems involving the calculation of percentages and the use of percentages for comparison.

a) Calculate these percentages:

5% of 180	
25% of 340	
40% of 210	
65% of 450	

b) Asif uses 40% of a 1.5kg bag of flour. How much flour is left in grams?

c) 2 bottles of washing up liquid are on offer in a supermarket.

Bottle A usually has 750ml but now has an extra 20%.
Bottle B usually has 1.2l, but now has an extra 25%
How much more does Bottle B have than Bottle A?
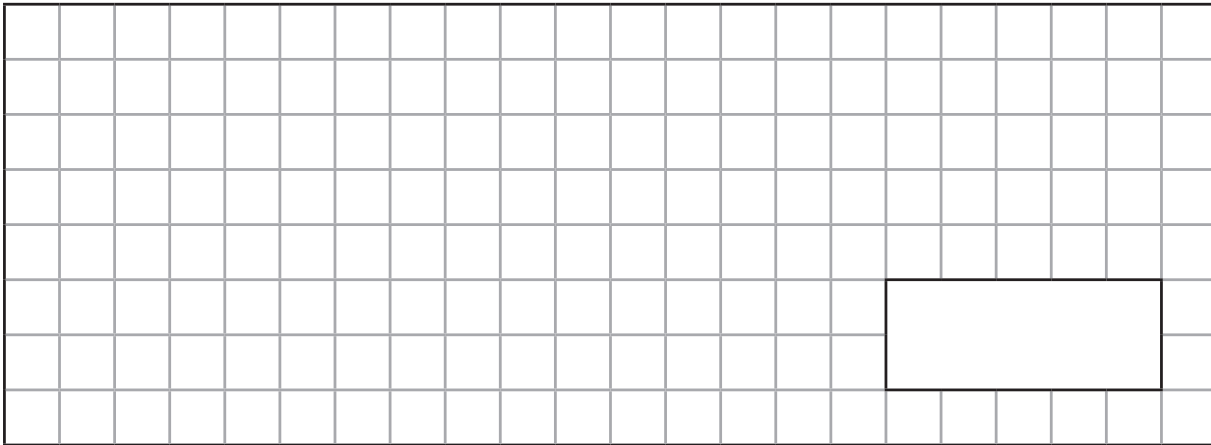
d) In a survey 35% of children chose football as their favourite sport. In a pie chart what angle would be used to draw the 35%?

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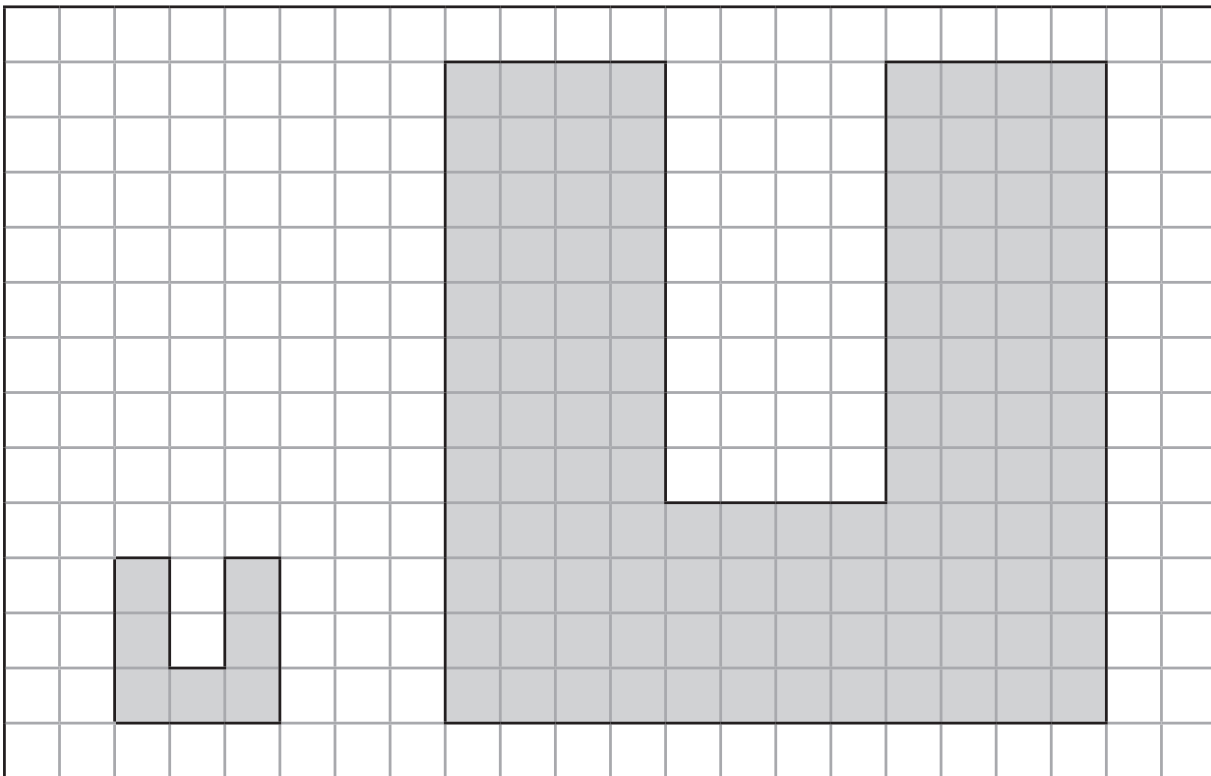**e)** Steph has a bag of 30 marbles. Umar has a bag of 24 marbles. What percentage of her marbles must Steph give to Umar, so they both have the same number of marbles?

3. Solve problems involving similar shapes where the scale factor is known or can be found.

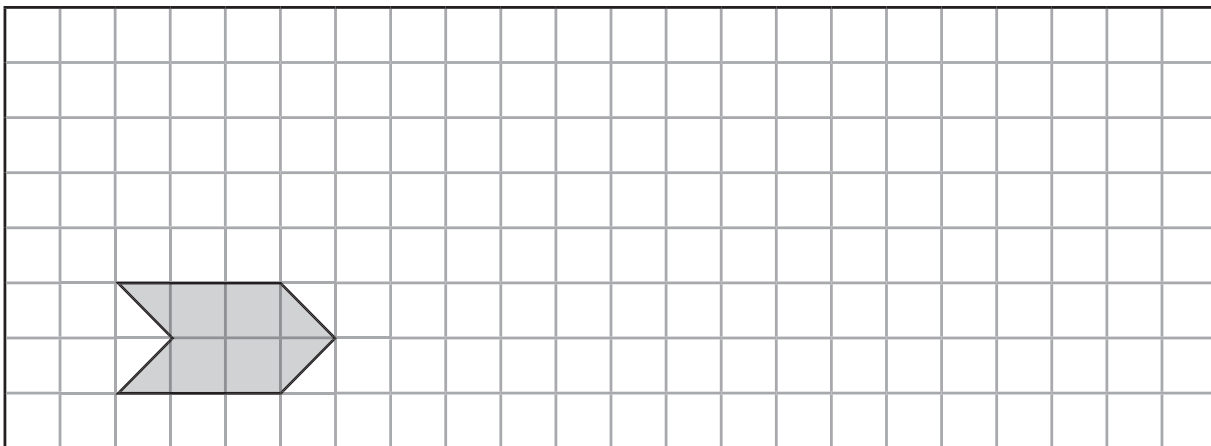**a)** Identify the scale factor that has been used to enlarge this shape:

b) Identify the scale factor that has been used to enlarge this shape:
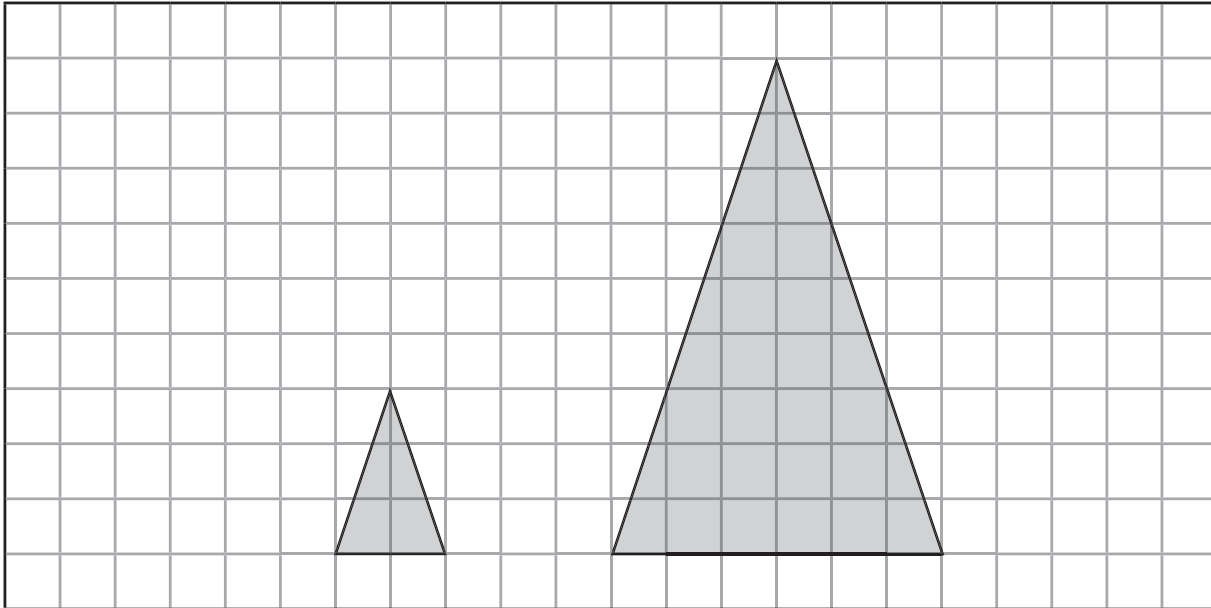
c) Enlarge this shape by a scale factor of 2.
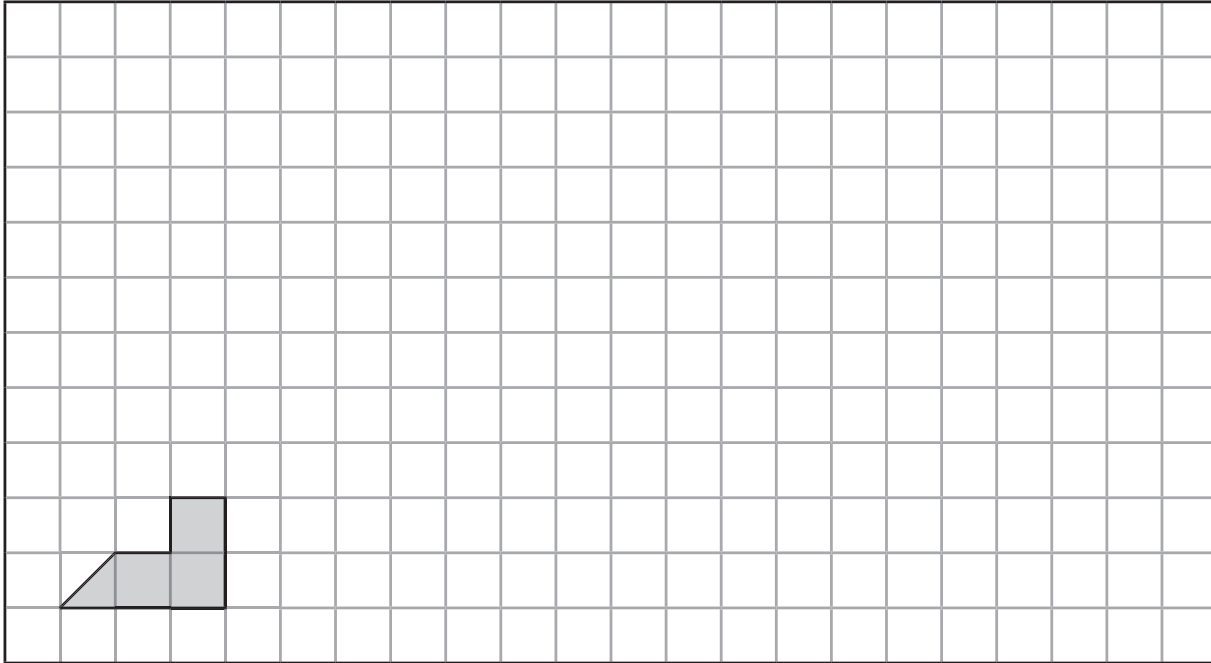
d) Enlarge this shape by a scale factor of 5.

e) The perimeter of a square is 8cm. The square is enlarged by a scale factor of 5. What is the length of one side of the new square?

f) An equilateral triangle has sides of length 15cm. It is enlarged so the length measures 75cm. By what scale factor has the triangle been enlarged?

4. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

a) A bag of balls for PE has 3 blue balls, 5 green balls and 2 red balls.

A school buys enough bags so there are 15 blue balls.
How many green and red balls will there be?

green balls: red balls:

b) In 2 Year 6 classes, $\frac{2}{5}$ of the children are girls. There are 39 boys.

How many children are there in the class?

c) Some children check through all the felt tip pens in a classroom. $\frac{3}{8}$ of the pens need to be thrown away. 75 pens are left. How many pens were thrown away?
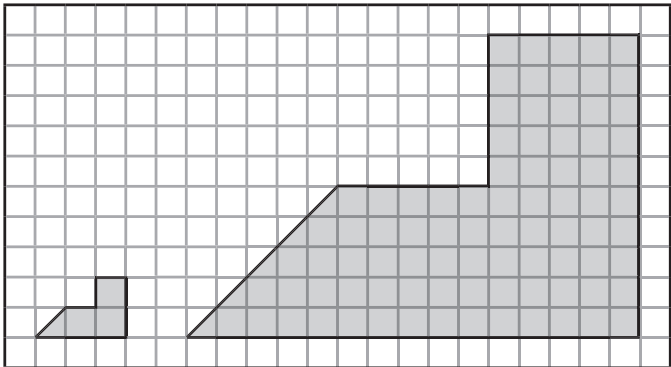
question	answer	marks	notes
1. Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.			
a	£45.50	1	
b	£16.50	1	
c	525g	2	
2. Solve problems involving the calculation of percentages and the use of percentages for comparison.			
a	5% of 180 **9** 25% of 340 **85** 40% of 210 **84** 65% of 450 **292.5**	4	Award one mark for each correct answer.
b	900g	1	
c	A now 900ml, B now 1.5l B has 0.6l or 600ml more	2	2 marks for a correct answer. 1 mark for correct method but 1 error in calculation.
d	126^0	1	
e	3 marbles so 10%	2	2 marks for 10%, 1 mark for correctly calculating a percentage from an incorrect number of marbles. (e.g. Steph must give 6 marbles = 20%)
3. Solve problems involving similar shapes where the scale factor is known or can be found.			
a	4	1	
b	3	1	
c		1	

question	answer	marks	notes
d		1	
e	10cm (perimeter is 40cm)	1	
f	5	1	
4. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.			
a	25 green balls and 10 red balls	1	
b	65 children	2	2 marks for correct answer. 1 mark for correct method but 1 mistake in calculating.
c	45 pens	2	2 marks for correct answer. 1 mark for correct method but 1 mistake in calculating.
		Total 25	