

Name:



Maths Assessment Year 6 Term 3: 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.

Date:

c) Here are the ingredients for an apple chutney:

- 2 large apples
1 red onion
125g sultanas
80ml vinegar
40g sugar

Jacob has 100g of sugar. Using all of this sugar, what weight of sultanas will he need to make this recipe?

A blank grid with a 10x10 structure. A rectangular box is drawn on the right side, spanning 4 columns and 2 rows.

2 marks

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

a) Calculate these percentages:

10% of 170	
35% of 320	
50% of 116	
75% of 660	

4 marks

b) Anita uses 30% of a 1.5kg bag of sugar. How much sugar is left in grams?

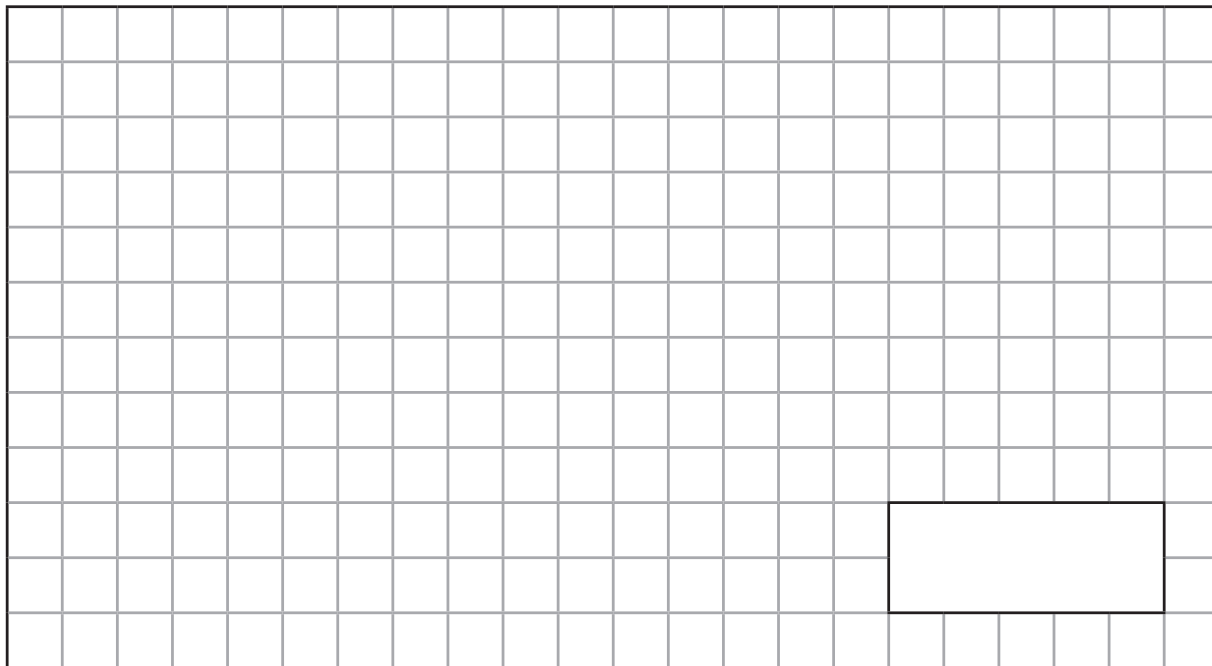
A blank grid with a 10x10 structure. A rectangular box is drawn on the right side, spanning 4 columns and 2 rows.

1 mark

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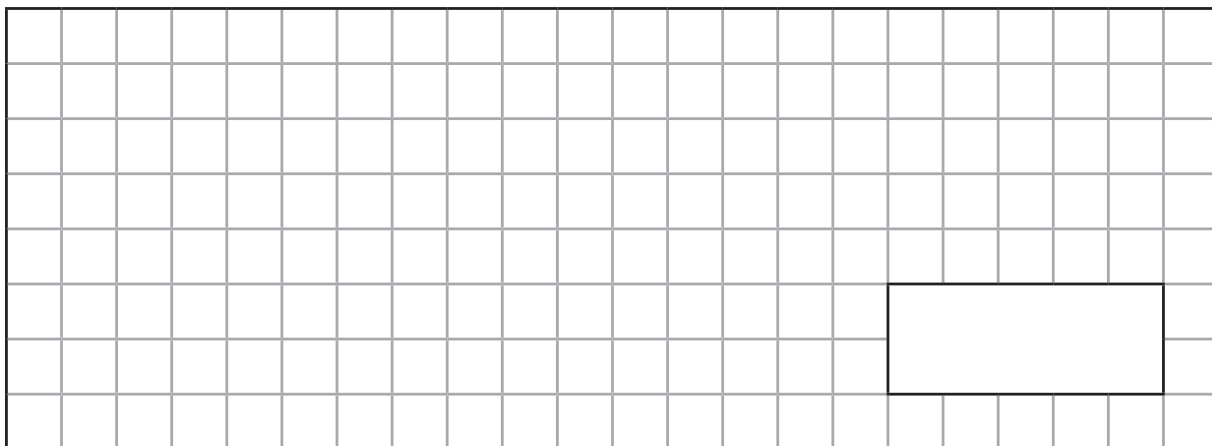
- c) A chocolate manufacturer sells a 320g bar of chocolate for 50p. The size of the bar is reduced by 20%, and the price is reduced to 42p.

Is the chocolate bar better, the same or less value now?



2 marks

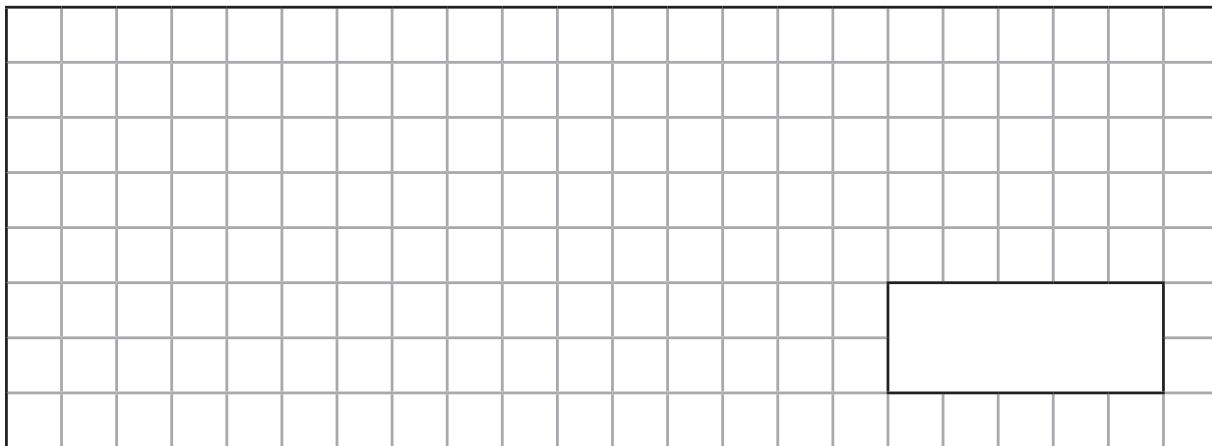
- d) In a survey, 45% of children chose salt and vinegar as their favourite flavour of crisps. In a pie chart, what angle would be used to draw the 45%?



1 mark

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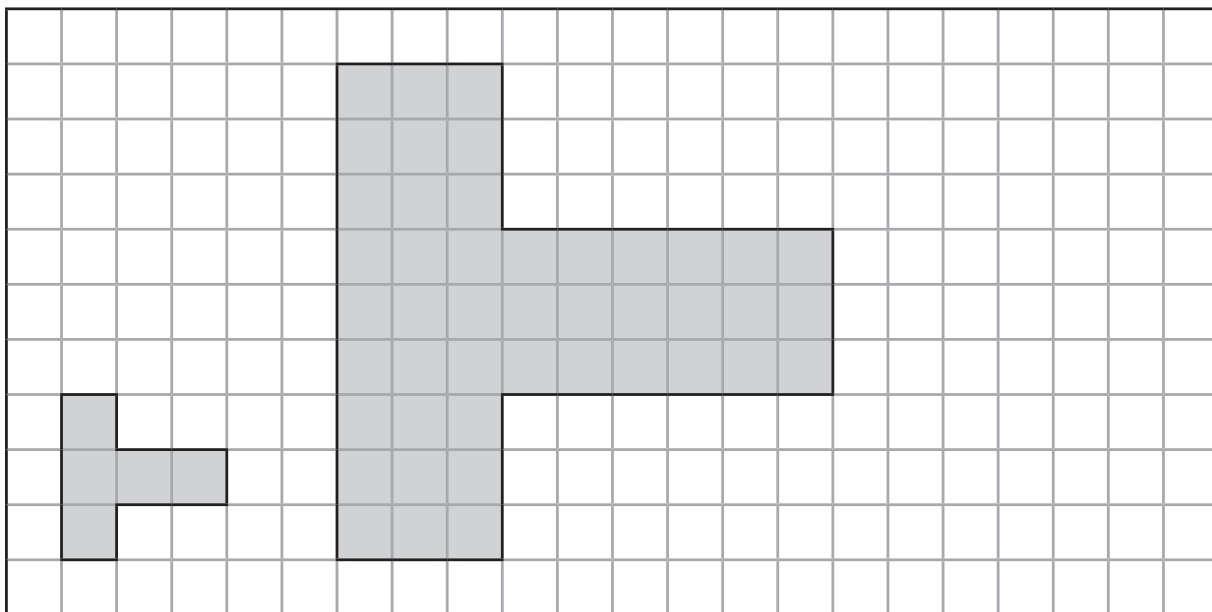
- e) Jay and Alex have a total of 77 toy cars between them. Jay has 20% more than Alex. How many toy cars do they each have?



2 marks

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:

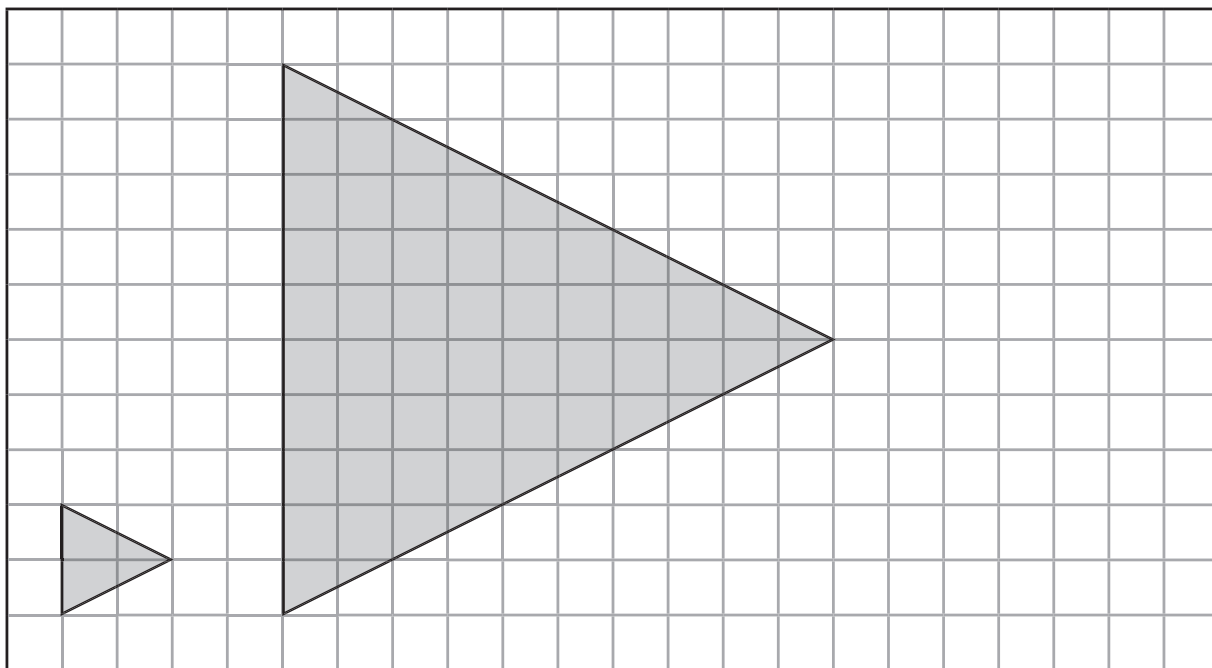


1 mark



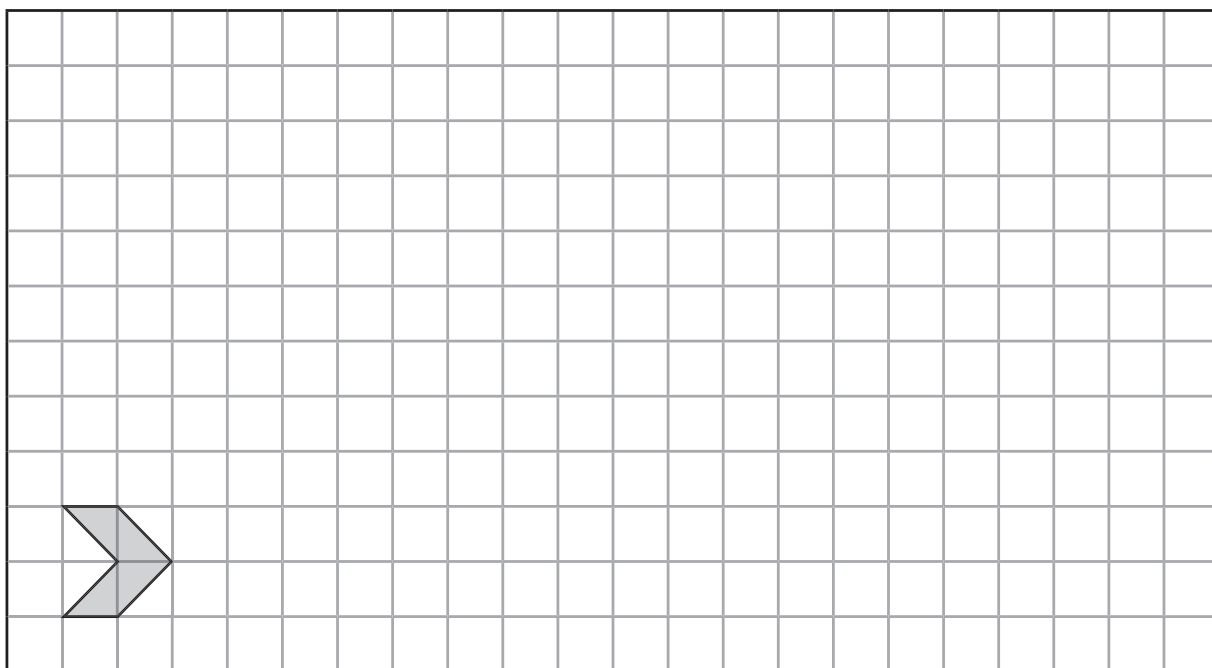
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b) Identify the scale factor that has been used to enlarge this shape:



1 mark

c) Enlarge this shape by a scale factor of 4.

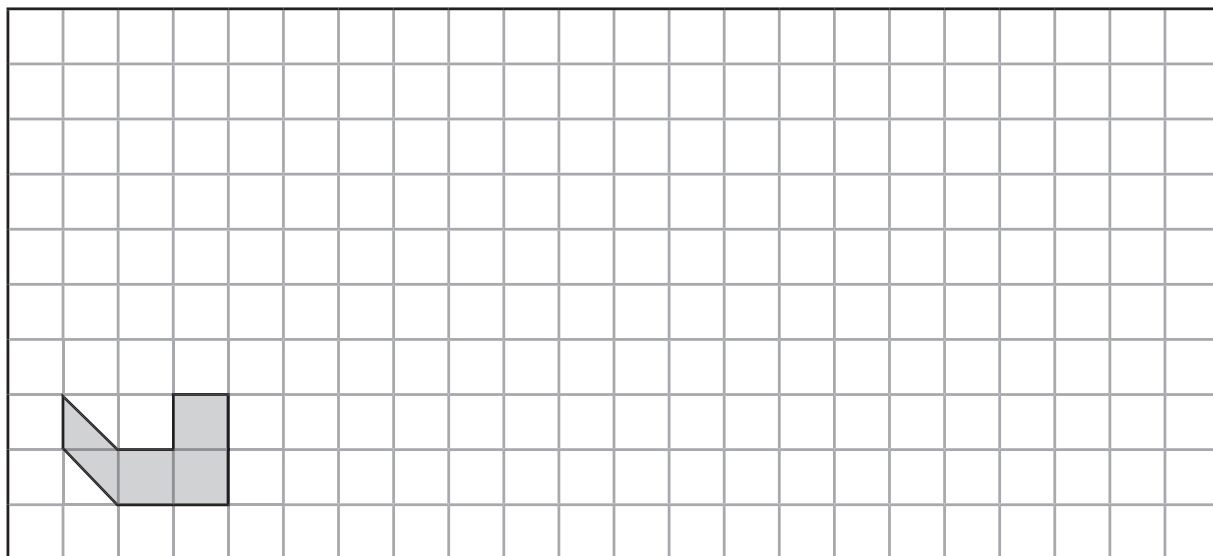


1 mark



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d) Enlarge this shape by a scale factor of 2.



1 mark

e) The perimeter of a rectangle is 14cm. It is enlarged by a scale factor of 4. What could be the lengths of the sides in the new rectangle?



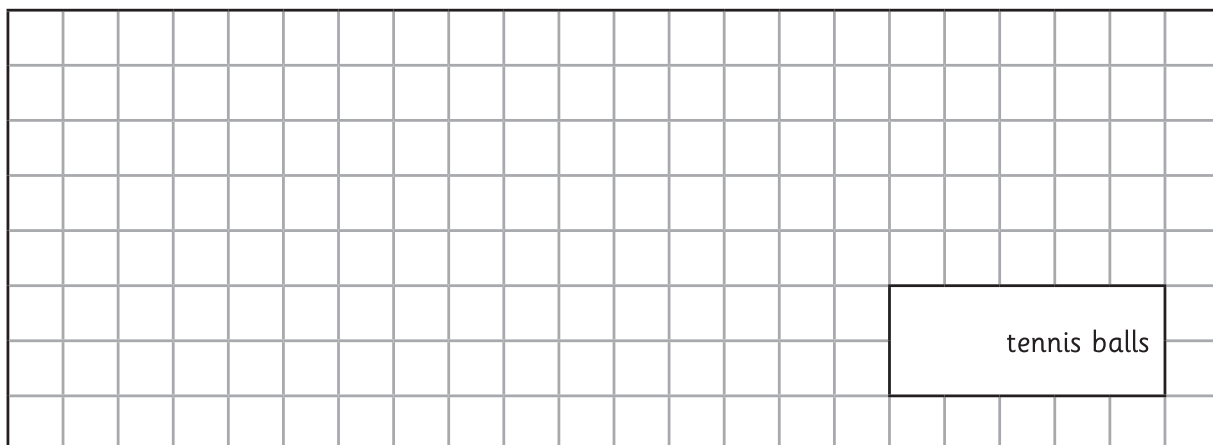
2 marks



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

a) A tennis kit contains: 1 net, 2 net posts, 4 tennis rackets and 15 tennis balls.

A school buys enough kits so there are enough rackets for a class of 30 children.
How many tennis balls will there be in the packs the school buys?



1 mark



Total for this page

- b) A class of children plant some sunflower seeds. Three quarters of the seeds grow to be flowers. Half of the remaining seeds germinated but did not produce flowers. There were 9 seeds that did not germinate.

How many sunflower seeds were planted?

A blank grid with a 10x10 structure. A rectangular box is drawn on the right side, spanning 4 columns and 2 rows.

2 marks

- c) A cricketer scored $\frac{2}{3}$ of his 108 runs in fours. Half of the remaining runs, he hit in sixes. The rest of the runs were scored by running between the wickets.

How many runs did he score by running between the wickets?

A large grid of graph paper, consisting of 20 columns and 10 rows of squares. A rectangular box is drawn on the right side of the grid, spanning 4 columns and 2 rows. The box is located in the bottom right corner of the grid, starting from the 16th column and the 8th row, and ending at the 20th column and the 10th row.

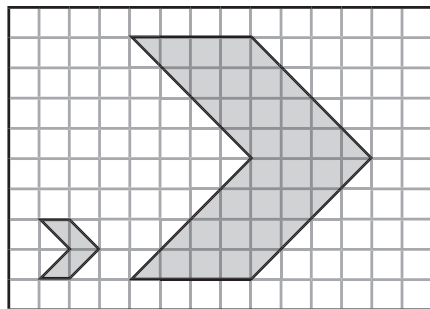
2 marks

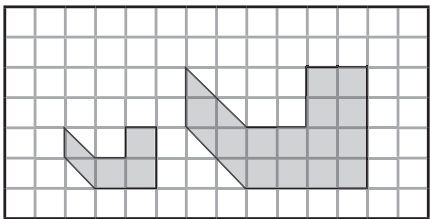
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Answer Sheet: Maths Assessment Year 6 Term 3:

Ratio and Proportion



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	£87.50	1									
b	£22	1									
c	312.5g	2									
2. Solve problems involving the calculation of percentages and the use of percentages for comparison.											
a	<table><tr><td>10% of 170</td><td>17</td></tr><tr><td>35% of 320</td><td>112</td></tr><tr><td>50% of 116</td><td>58</td></tr><tr><td>75% of 660</td><td>495</td></tr></table>	10% of 170	17	35% of 320	112	50% of 116	58	75% of 660	495	4	Award one mark for each correct answer.
10% of 170	17										
35% of 320	112										
50% of 116	58										
75% of 660	495										
b	1050g	1									
c	Less value. 20% cheaper would be 40p Other solutions could apply.	2	2 marks for a correct answer. 1 mark for correct method but 1 error in calculation.								
d	162°	1									
e	Jay has 42 cars and Alex has 35 cars. One solution is to divide 77 by 2.2, because, if Alex has 1 set, Jay has 1 set + 20% (or 1 + 0.2) 77 cars = 2.2 sets.	2	2 marks for the correct answer; 1 mark for correctly calculating identifying a calculation that will give the answer, even if the calculating is incorrect.								
3. Solve problems involving similar shapes where the scale factor is known or can be found.											
a	3	1									
b	5	1									
c		1									

question	answer	marks	notes
d		1	
e	The long and short sides must add up to 28cm (e.g. 20 cm and 8 cm / 24 cm and 4 cm)	2	
4. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.			
a	120 tennis balls	1	
b	72 seeds	2	2 marks for correct answer. 1 mark for correct method but 1 mistake in calculating
c	18 runs	2	2 marks for correct answer. 1 mark for correct method but 1 mistake in calculating
		Total 25	