

Name:



Maths Assessment Year 6: 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.

Name:

Date:



Maths Assessment Year 6: 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) One ticket to a local football match costs £5.50.

Calculate the cost of nine tickets.



b) Two pizzas cost £17.00.

Calculate the cost of five pizzas.



c) The cost of five tickets to the cinema is £37.50.

Calculate the cost of one ticket.



d) The cost of eight ice creams is £20.

Calculate the cost of six ice creams.



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

a) Calculate these percentages:

5% of 150	
25% of 240	
10% of 88	
45% of 200	



b) Jessica has a bag with 20 sweets in and Jon has a bag with 30 sweets in. Jessica eats 25% of her sweets. Jon eats 60% of his sweets.

Who has the most sweets left?



1 mark

c) A bottle of orange squash contains 1.1 litres of squash.

If 20% is poured out of the bottle, how much is left in **millilitres**?



1 mark

d) Two boxes of washing powder are on special offer at the supermarket.

Box **A** normally contains 2kg of powder, but now has 10% extra.

Box **B** normally contains 1.5kg of powder, but now has 20% extra.

Which has the most powder?



1 mark

e) Vidya is training for a running race by jogging once around the park. The total distance around the park is 2km. She jogs for 1.8km, but then walks the rest of the way. What percentage of the distance does she walk?



1 mark

f) In a survey, some people were asked to name their favourite food.

Type of food	Number of people
Pizza	30%
Chips	40%
Jacket potatoes	20%
Burgers	10%

If you were to draw a pie chart to show this information, what size angle would be needed to show the percentage answer for burgers?



2 marks

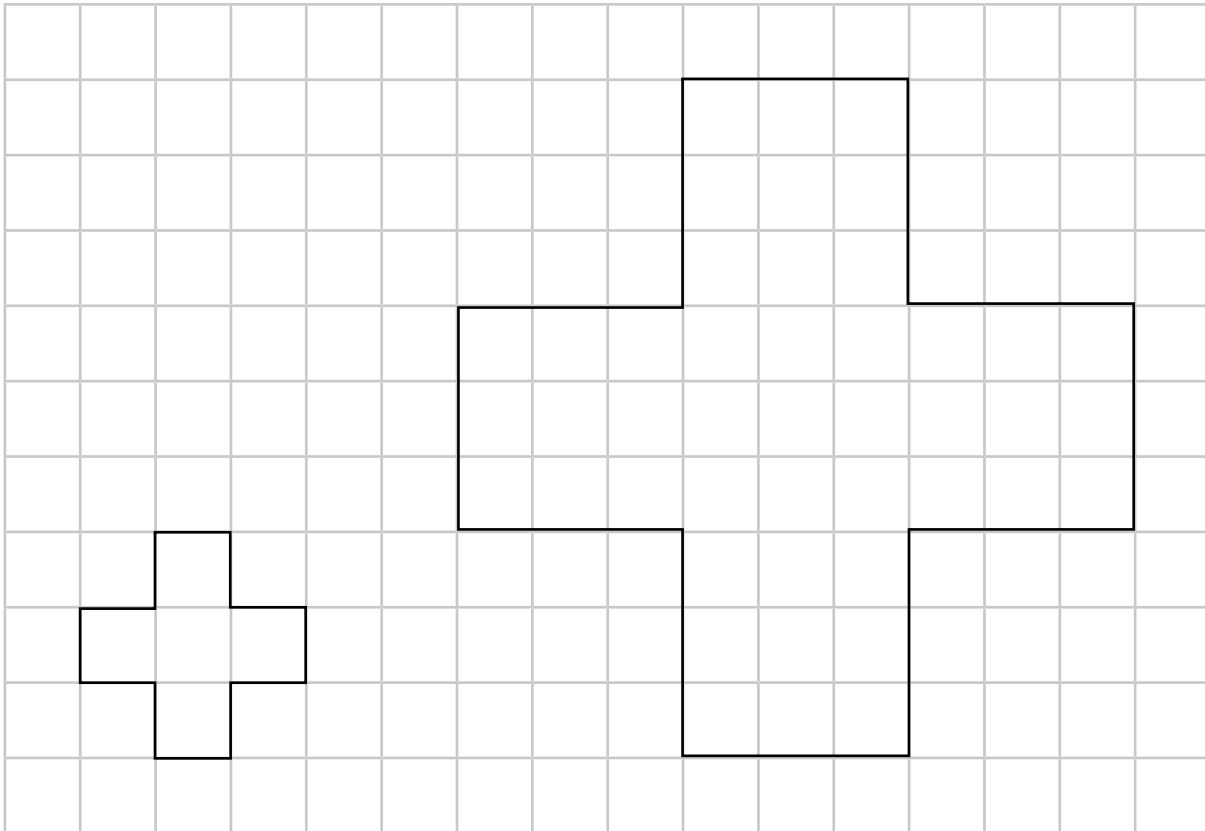
What size angle would be needed to show the answer for jacket potatoes?



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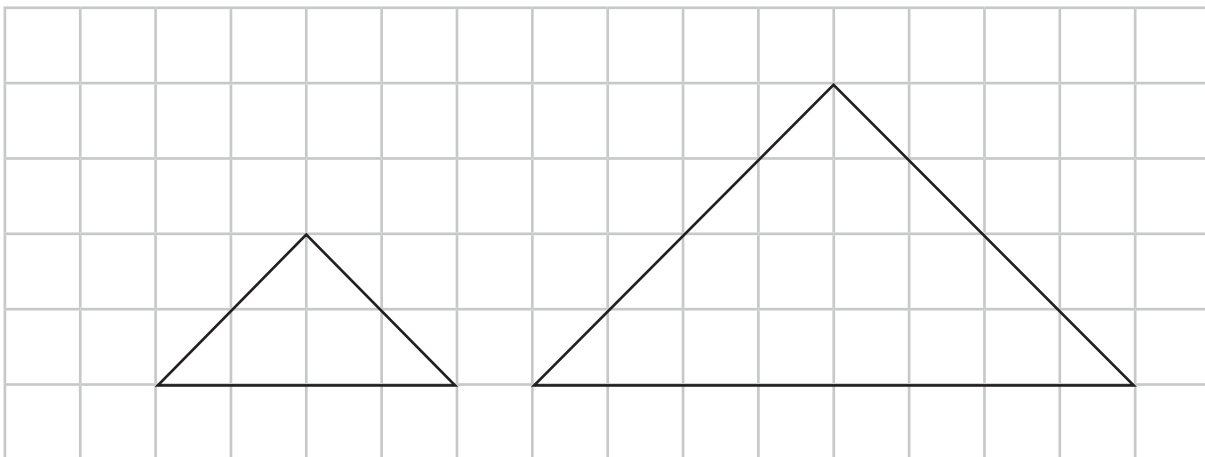
3. Solve problems involving similar shapes where the scale factor is known or can be found.

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



1 mark

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

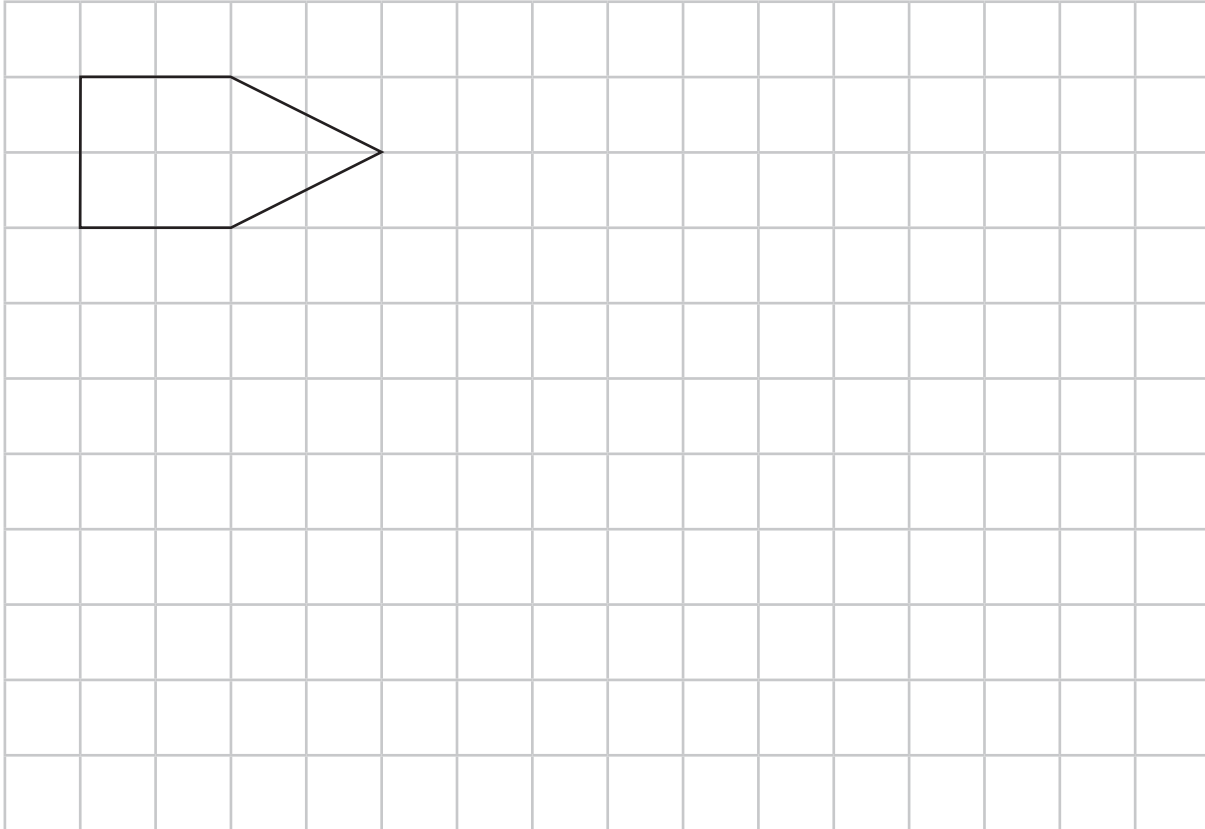


1 mark



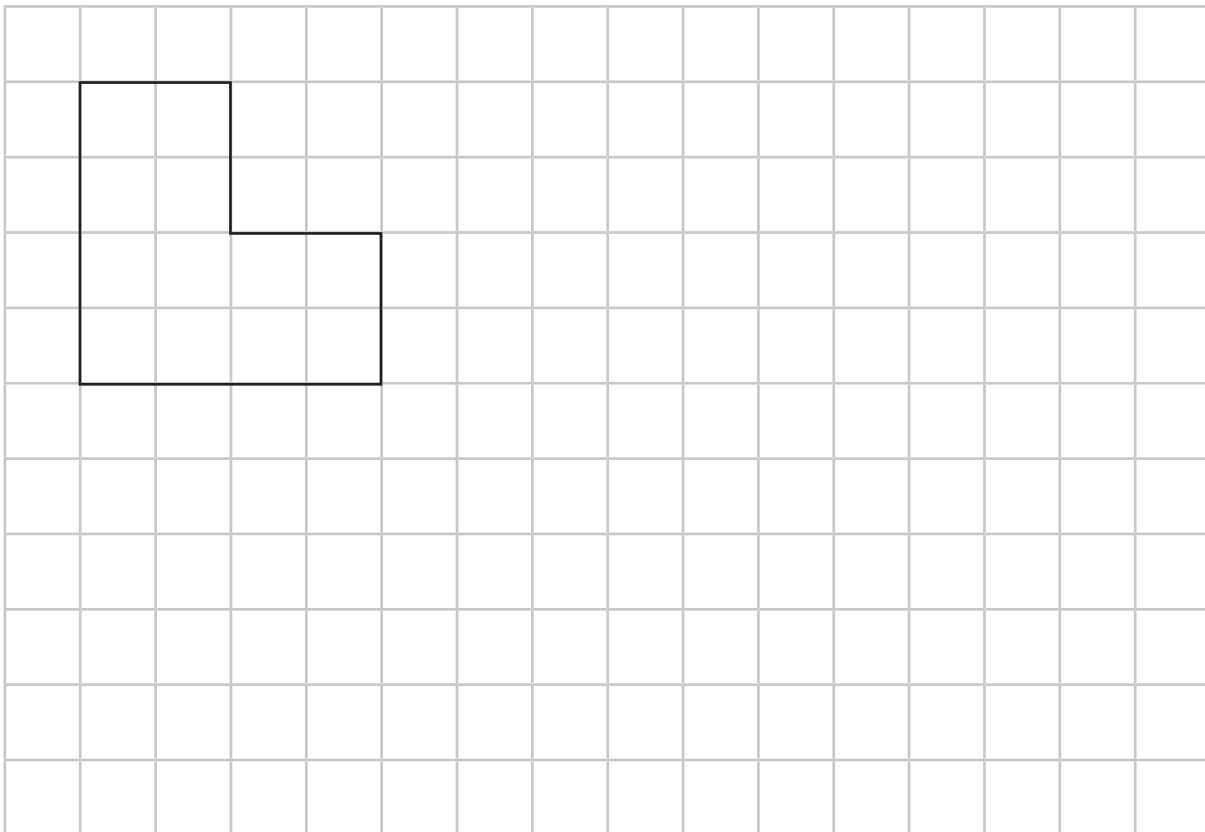
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c) Enlarge this shape by a scale factor of 3.

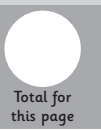


1 mark

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



1 mark



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e) The length of a rectangle measures 8 cm. What would the measurement of the length be if the shape was enlarged by a scale factor of 4?



f) Square **A** has been enlarged to create Square **B**.

Square **A**'s lengths each measure 9 cm.

Square **B**'s lengths each measure 45 cm.

What scale factor has been used to enlarge Square **A**?



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

a) In a packet of sweets, for every 3 orange sweets there are 4 green sweets.

If there are 6 orange sweets, how many green sweets would there be?



b) In a class of 30 children, 25 children are girls and the rest are boys.

What is the ratio of girls to boys?



c) On the farm, 1 in 4 animals is a sheep.

If there are 120 animals in total, how many sheep are there?



d) In the park $\frac{4}{5}$ of the trees are oak trees.

If there are 80 trees in total, how many oak trees are there?



1 mark

e) David is making a cake.

The recipe says that for every three eggs he uses, he needs 120 grams of flour.

If he uses 480 grams of flour, how many eggs will he need?

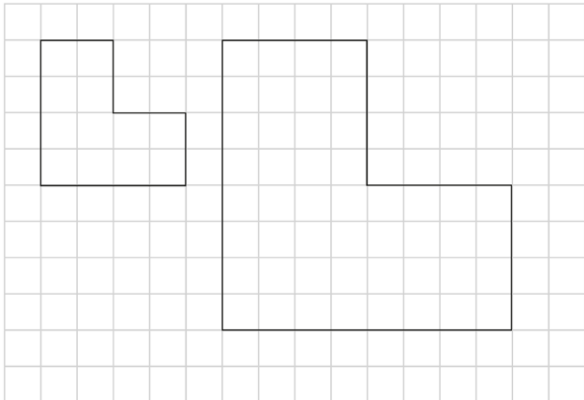


1 mark



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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	£49.50	1									
b	£42.50	1									
c	£7.50	1									
d	£15.00	1									
2. Solve problems involving the calculation of percentages and the use of percentages for comparison.											
a	<table border="1"> <tr> <td>5% of 150</td> <td>7.5</td> </tr> <tr> <td>25% of 240</td> <td>60</td> </tr> <tr> <td>10% of 88</td> <td>8.8</td> </tr> <tr> <td>45% of 200</td> <td>90</td> </tr> </table>	5% of 150	7.5	25% of 240	60	10% of 88	8.8	45% of 200	90	4	Award one mark for each correct answer.
5% of 150	7.5										
25% of 240	60										
10% of 88	8.8										
45% of 200	90										
b	Jessica	1									
c	880 ml	1									
d	Box A	1									
e	10 %	1									
f	<table border="1"> <tr> <td>36°</td> </tr> <tr> <td>72°</td> </tr> </table>	36°	72°	2	Award one mark for each correct answer.						
36°											
72°											
3. Solve problems involving similar shapes where the scale factor is known or can be found.											
a	3	1									
b	2	1									
c		1									

question	answer	marks	notes
d		1	
e	32 cm	1	
f	5	1	
4. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.			
a	8	1	
b	5:1	1	
c	30	1	
d	64	1	
e	12	1	
		Total 25	