

## Arithmetic

1.  $\frac{7}{8} \times \frac{4}{9}$

2.  $12 - 3.79$

3.  $15 \times 2.3$

4.  $2 \frac{3}{4} \times 4$

## Practice: Using Scale Factors

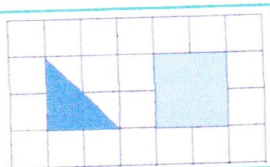
5. Recap: Explain what 'increase by a scale factor of 2' means.



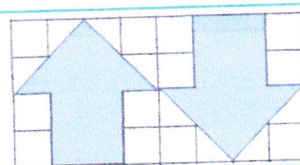
6. Copy the shape onto squared paper and draw it twice as big.



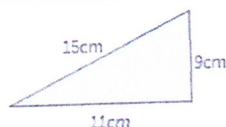
7. Copy the shapes onto squared paper and draw them three times as big.



8. Copy the shapes onto squared paper and draw them twice as big.



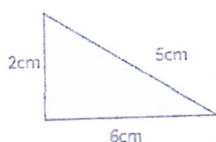
9. Enlarge this triangle by scale factor 2.



10. When enlarging shapes, do the angles also increase? Explain.



11. Enlarge this triangle by scale factor 3.



12. Enlarge this square by scale factor 4.



13. Mason has enlarged a square with sides of 10cm by a scale factor of 4. He says the new sides measure 14cm. Is this correct? Explain.



## Challenge

14. Louise and Alister are making dinner. The recipe is for 4 people. Rewrite the ingredient list for a. 2 people, b. 3 people.

Pasta - 450g

Basil - 10 leaves

Tinned tomatoes - 2 tins (800g)

Garlic - 1 clove

Cheese - 15g

You might want  
to talk to an adult

Spot the mistake

x2

## Answers

Q no.	Question	Answer
1	$\frac{7}{8} \times \frac{4}{9}$	$\frac{28}{72}$
2	$12 - 3.79$	8.21
3	$15 \times 2.3$	34.5
4	$2 \frac{3}{4} \times 4$	11
5	Explain what 'increase by a scale factor of 2' means.	With shapes - This means the dimensions of the shape need to all be multiplied by 2. With numbers - This means the number needs to be multiplied by 2. An error that could be made with this is believing it means adding 2.
6	Copy the shape onto squared paper and draw it twice as big.	The sides should all be double the original.
7	Copy the shapes onto squared paper and draw them three times as big.	The sides should all be three times the original.
8	Copy the shapes onto squared paper and draw them twice as big.	The sides should all be double the original.
9	Enlarge this triangle by scale factor 2.	Correctly drawn (30cm, 18cm, 22cm)
10	When enlarging shapes, do the angles also increase? Explain.	Angles do not change when a shape is enlarged. Some pupils may believe that the angles would enlarge, this can be disproved by looking at question 9. In question 9, the triangle is a right angle triangle. The right angle does not change when they enlarge it. The angles do not increase as the angles at which the lines meet has not changed.
11	Enlarge this triangle by scale factor 3.	Correctly drawn (6cm, 15cm, 18cm)
12	Enlarge this square by scale factor 4.	12 x 12cm
13	Is this correct? Explain.	Mason is incorrect. He has added 4 to the length instead of increasing by a scale factor of 4.
14	Louise and Alister are making dinner. The recipe is for 4 people. Rewrite the ingredient list for a. 2 people, b. 3 people.  Pasta - 450g Basil - 10 leaves Tinned tomatoes - 2 tins (800g) Garlic - 1 clove Cheese - 15g	a. Pasta - 225g Basil - 5 leaves Tinned tomatoes - 1 tin (400g) Garlic - $\frac{1}{2}$ clove Cheese - 7.5g  b. Pasta - 337.5g Basil - 7.5 leaves Tinned tomatoes - 1 $\frac{1}{2}$ tins (600g) Garlic - $\frac{3}{4}$ clove Cheese - 11.25g