

1. A jumper is knitted using 12 balls of colour A, 2 balls of colour B and 1 ball of colour C.

Each ball contains 60% wool and 40% acrylic, weighs 50g and costs £4.50. **b** What is the ratio of wool to acrylic? Give the

- **a** How much does the jumper weigh in kg? [1]
- ratio in its simplest terms. [1]
- **c** The cost of a 50g ball of wool increases by 5%.

What will it cost now to buy all the wool for the jumper? [1]

- **d** A similar jumper costs £65 to buy in a shop. Suggest reasons for choosing each of the jumpers. [2]
- 2. A road atlas uses a scale of 1 : 158 400

The distance from Sheffield to Leeds is 33 miles.

- **a** What is this distance in kilometres? [1]
- **b** What distance would this be on the map? [1]
- **c** Sheffield is on a bearing of 170° from Leeds. Draw a sketch to illustrate this bearing. [1]
- 3. These are the ingredients used to make a litre of fruit drink.

$\frac{1}{2}$ litre apple juice	$\frac{3}{10}$ litre orange juice

- **a** Work out the percentage of each fruit juice in the fruit drink. [3]
- **b** If $2\frac{1}{2}$ litres of fruit drink are required, what quantities of ingredients are needed? [3]
- c Write down the ratio of the fruit drink ingredients in the simplest terms. [1]



MIND MAP

 $\frac{1}{5}$ litre mango juice





RATIO, PROPORTION AND

CHANGE

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RATES (



Quadrilateral: a 4-sided shape.

Polygon: a many-sided shape.

Diagonal: a line joining opposite vertices.

Symmetry: a shape has symmetry if it stays the same when reflected or rotated.

Properties of triangles

Triangle	Example	Sides	Angles
equilateral		3 equal	3 equal
isosceles		2 equal	2 base angles equal
scalene	a b	3 different	3 different
right angled	Hypotenuse	hypotenuse opposite right angle	1 right angle (90°)

Equal sides are shown

by short lines across;

parallel sides are shown by arrows.

Properties of quadrilaterals

Quadrilateral	Sides	Angles	Diagonals	Lines of
				symmetry
square	4 equal, 2 pairs	4 equal (90°)	equal and	4
	parallel		bisect at 90°	
rectangle	2 opposite	4 equal (90°)	equal and	2
	pairs parallel		bisect each	
	and equal		other	
parallelogram	2 opposite	2 pairs of opposite	bisect each	0
	pairs parallel	angles equal	other	
	and equal			
rhombus	4 equal, 2 pairs	2 pairs of opposite	bisect each	2
	parallel	angles equal	other at 90°	
trapezium	1 pair parallel	4 different	both different	0
isosceles	1 pair parallel	2 pairs of adjacent,	2 equal	1
trapezium		equal angles		

Polygons

Polygons are called **regular** if all sides and angles are equal.



MODULE 27

PROPERTIES OF 2D SHAPES MODULE 27 63