Varied Fluency
Step 8: Angles in Quadrilaterals

National Curriculum Objectives:

Mathematics Year 6: (6G3a) Draw 2-D shapes using given dimensions and angles
Mathematics Year 6: (6G2a) Compare and classify geometric shapes based on their properties and sizes
Mathematics Year 6: (6G4a) Find unknown angles in any triangles, quadrilaterals, and regular polygons

Differentiation:

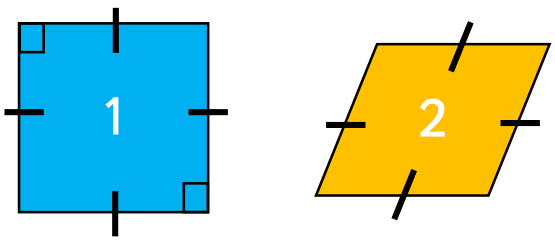
Developing Questions to support understanding and calculating angles in quadrilaterals. Focus on squares and rhombus.
Expected Questions to support understanding and calculating angles in quadrilaterals. Including squares, rhombuses, trapeziums, rectangles and parallelograms.
Greater Depth Questions to support understanding and calculating angles in quadrilaterals. Including compound shapes made up of squares, rhombuses, trapeziums, rectangles and parallelograms.

More Year 6 Properties of Shapes resources.

Did you like this resource? Don't forget to review it on our website.

Angles in Quadrilaterals

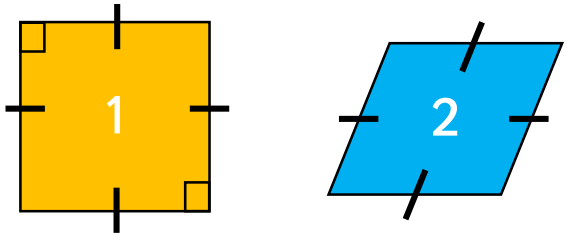
1a. Find at least one difference between the square and the rhombus.



D VF

Angles in Quadrilaterals

1b. Find two similarities between the square and the rhombus.



D VF

2a. Mollie says:

A rhombus has 4 angles of 90°.

Is she correct?

D VF

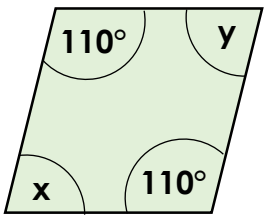
2b. Greg says:

The angles where the diagonals of a square meet are 90°.

Is he correct?

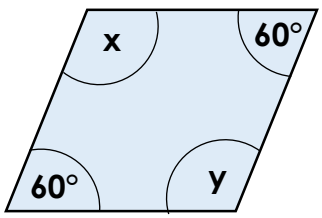
D VF

3a. True or false? Angles x and y in this rhombus are 50°.



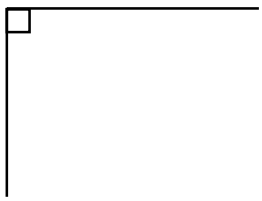
D *Quadrilaterals not drawn to scale.* VF

3b. True or false? Angles x and y in this rhombus are 120°.



D *Quadrilaterals not drawn to scale.* VF

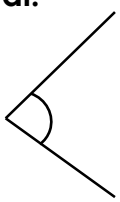
4a. Complete the drawing to create a quadrilateral.



Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

D VF

4b. Complete the drawing to create a quadrilateral.

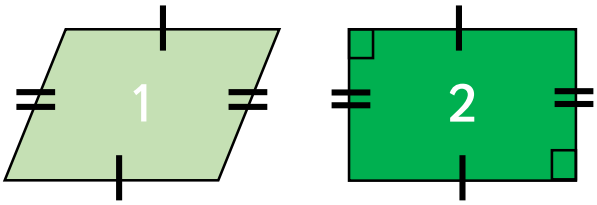


Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

D VF

Angles in Quadrilaterals

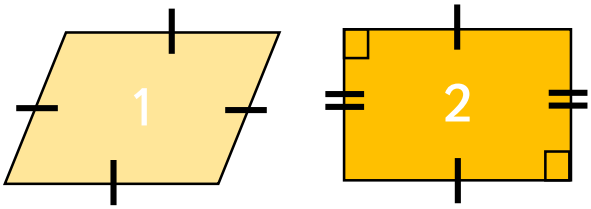
5a. Find at least one difference between the parallelogram and the rectangle.



E VF

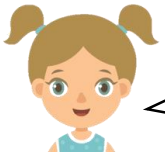
Angles in Quadrilaterals

5b. Find two similarities between the parallelogram and the rectangle.



E VF

6a. Leah says:



The sum of angles in a trapezium total 180°.

Is she correct?

E VF

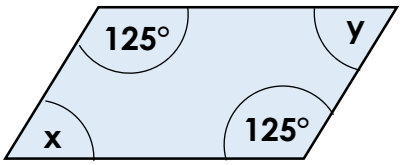
6b. Simon says:

The opposite sides of a quadrilateral are always equal.

Is he correct?

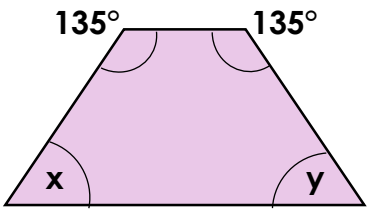
E VF

7a. True or false? Angles x and y in this parallelogram are 55°.



E *Quadrilaterals not drawn to scale.* VF

7b. True or false? Angles x and y in this trapezium are 40°.



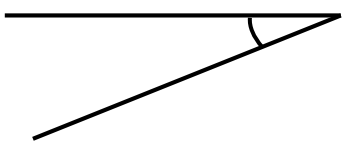
E *Quadrilaterals not drawn to scale.* VF

8a. Complete the drawing to create a quadrilateral.

Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

E VF

8b. Complete the drawing to create a quadrilateral.

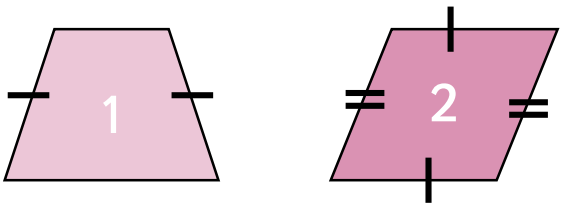


Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

E VF

Angles in Quadrilaterals

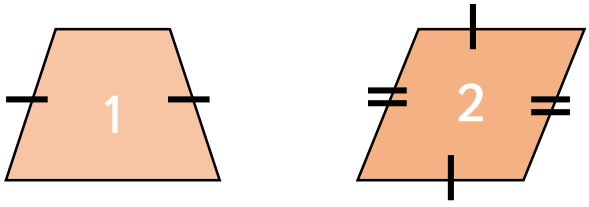
9a. Find three differences between the trapezium and the parallelogram.



GD VF

Angles in Quadrilaterals

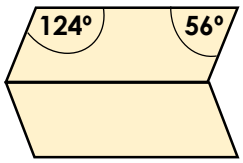
9b. Find three similarities between the trapezium and the parallelogram.



GD VF

10a. Ali says:

I have combined two identical parallelograms. The angles of the new shape will total 720°.

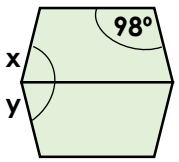


Is he correct?

GD *Quadrilaterals not drawn to scale.* VF

10b. Jayla says:

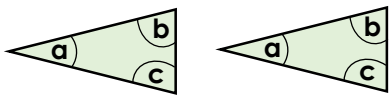
I have combined two identical trapeziums. Angles x and y will total 154°.



Is she correct?

GD *Quadrilaterals not drawn to scale.* VF

11a. Use these two triangles to make a parallelogram.

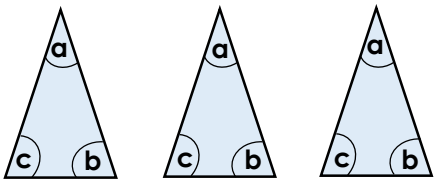


a	36°
b	72°

Calculate the size of angles in the new shape.

GD *Quadrilaterals not drawn to scale.* VF

11b. Use these three triangles to make a trapezium.



b	74°
c	74°

Calculate the size of angles in the new shape.

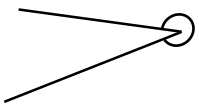
GD *Quadrilaterals not drawn to scale.* VF

12a. Draw a quadrilateral with at least one obtuse angle.

Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

GD VF

12b. Draw a quadrilateral with one retroflex angle inside the shape.



Name your shape and mark angles as:
O = obtuse, A = acute, RA = right angles

GD VF

Varied Fluency
Angles in Quadrilaterals

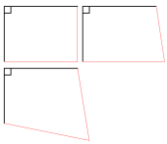
Developing

1a. Examples of differences (need 1):
Only opposite angles of rhombus are of equal size, while all angles in a square are equal.
A rhombus has 2 acute and 2 obtuse angles, whereas the square has 4 right angles.

2a. Incorrect. There are no right angles in a rhombus.

3a. False as x and y = 70°.

4a. Example answers, angles should also be labelled correctly:



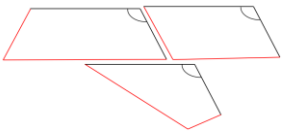
Expected

5a. Examples of differences (need 1):
The angles of the parallelogram are NOT 90° while the second are.
A parallelogram has 2 acute and 2 obtuse angles, whereas the rectangle has 4 right angles.

6a. Incorrect. The sum of the angles in a trapezium total 360°.

7a. True

8a. Example answers, angles should also be labelled correctly:

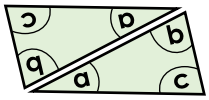


Greater Depth

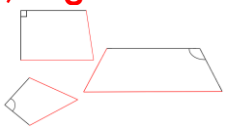
9a. Examples of differences (need 3):
Opposite sides of the second shape are both equal pairs, only one pair of opposite sides are equal on the first.
Opposite angles in the second are equal to each other.
Shape 2 has two sets of parallel lines, whereas shape 2 only has one.

10a. Correct

11a. 2 angles of 108° and 2 of 72° e.g.



12a. Example answers, angles should also be labelled correctly:



Varied Fluency
Angles in Quadrilaterals

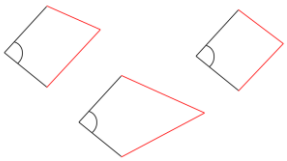
Developing

1b. Examples of similarities (need 2):
Both are quadrilaterals. Opposite sides of each shape are parallel to each other.
Their angles total 360°

2b. Correct. The diagonals of a square make 4 right angle triangles and are perpendicular (meet at 90°).

3b. True

4b. Example answers, angles should also be labelled correctly:



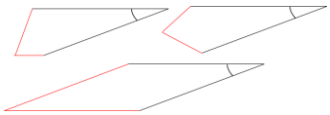
Expected

5b. Examples of similarities (need 2):
They are both quadrilaterals. In both, the opposite sides are parallel to each other. Opposite sides are the same length. Their angles total is 360°

6b. Incorrect. This is true for rectangles and squares but not parallelograms, trapezium or rhombus.

7b. False as x and y = 45°.

8b. Example answers, angles should also be labelled correctly:

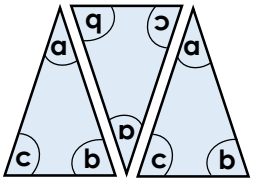


Greater Depth

9b. Examples of similarities (need 3):
They each have four sides. They are both quadrilaterals.
Their angles total is 360°.
Angles along the bases of both add to 180°.

10b. Incorrect. Angles x and y will total 164°.

11b. 2 angles of 74° and 2 of 106° e.g.



12b. Example answers, angles should also be labelled correctly: