

Varied Fluency – 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, rhombus, rectangles and parallelograms.

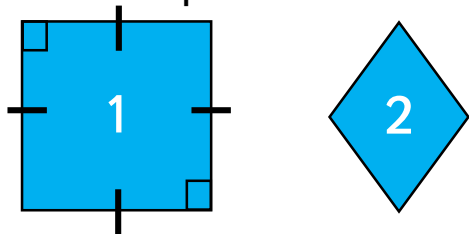
Greater Depth Questions to support understanding and calculating angles in quadrilaterals. Including multiple calculations to create and describe squares, rhombus, rectangles and parallelograms.

More [Year 6 Properties of Shapes](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

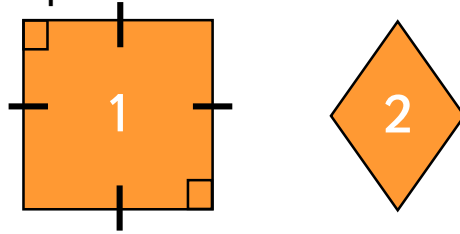
Varied Fluency – Angles in Quadrilaterals

1a. Find at least one difference between these two shapes.



VF

1b. Find 2 similarities between these two shapes.



Can you name them?



VF

2a. Mollie says,



Rectangles have 4 angles of 90°

Is she correct?



VF

2b. Greg says,



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

Is he correct?



VF

3a. These two triangles are used to make a quadrilateral.



Calculate the size of the angles of the quadrilateral and name it.



VF

3b. These two triangles are used to make a quadrilateral.

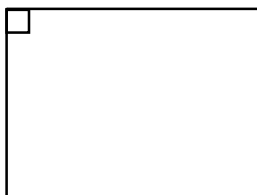


Calculate the size of the angles of the quadrilateral and name it.



VF

4a. Complete the drawing to create a quadrilateral.

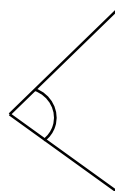


Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

4b. Complete the drawing to create a quadrilateral.



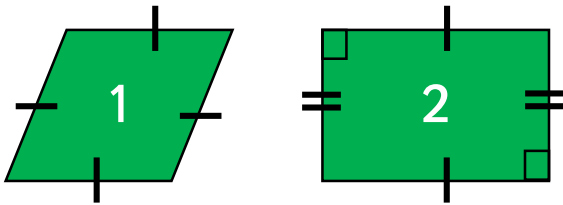
Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

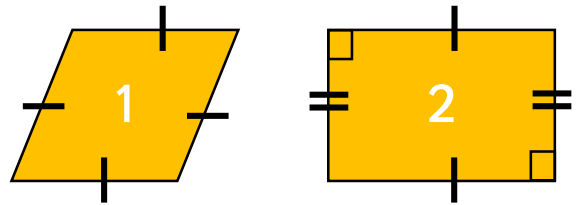
Varied Fluency – Angles in Quadrilaterals

5a. Find 2 differences between these two shapes.



VF

5b. Find 3 similarities between these two shapes.

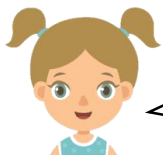


Can you name them?



VF

6a. Leah says,



The sum of angles in a quadrilateral is 180° .

Is she correct?



VF

6b. Simon says,



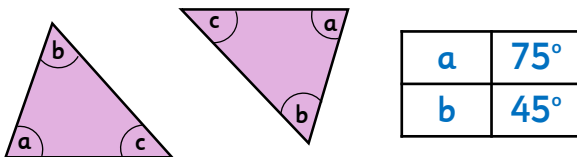
The opposite sides of a quadrilateral are always equal.

Is he correct?



VF

7a. These two triangles are used to make a quadrilateral.

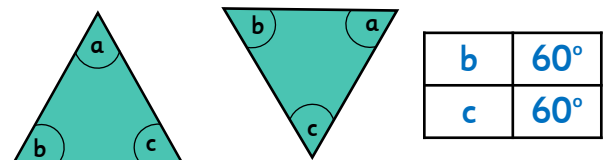


Calculate the size of the angles of the quadrilateral and name it.



VF

7b. These two triangles are used to make a quadrilateral.



Calculate the size of the angles of the quadrilateral and name it.



VF

8a. Complete the drawing to create a quadrilateral.

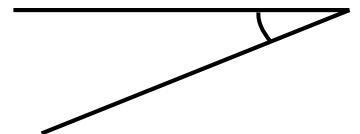


Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

8b. Complete the drawing to create a quadrilateral.



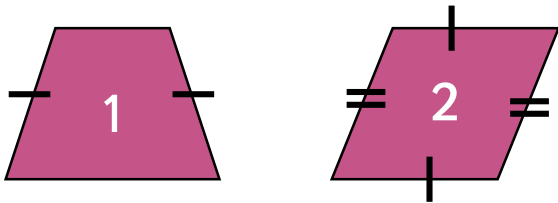
Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

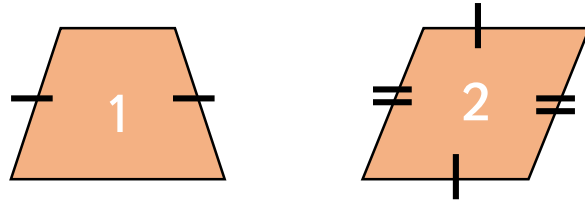
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9a. Find 3 differences between these two shapes.



VF

9b. Find 3 similarities between these two shapes.



Can you name them?



VF

10a. Ali says,



If you have any two angles of a parallelogram you can calculate the others.

Is he correct?



VF

10b. Jayla says,



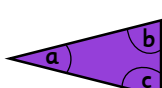
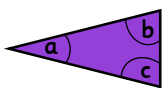
The angles of a parallelogram are always obtuse.

Is she correct?



VF

11a. These two triangles are used to make a quadrilateral.



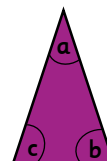
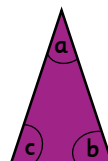
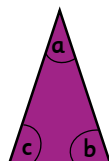
a	36°
b	72°

Calculate the size of the angles of the quadrilateral and name it.



VF

11b. These three triangles are used to make a quadrilateral.



b	74°
c	74°

Calculate the size of the angles of the quadrilateral and name it.



VF

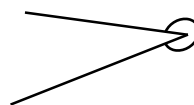
12a. Draw a quadrilateral with at least one obtuse angles. .

Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

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



Name your shape and mark angles as
O = obtuse A = acute R = right angles



VF

Varied Fluency – Angles in Quadrilaterals

Developing

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

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

Rhombus and Square

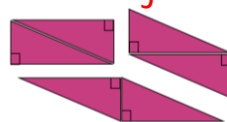
- 2a. Correct, all angles in a square are right angles.

- 2b. Correct, the diagonals of a square make 4 right angles triangles and are perpendicular (meet at 90°).

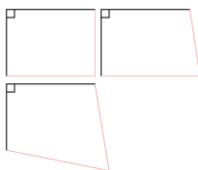
- 3a. Square, all angles are 90° or parallelogram with 2 angles of 135° and 2 of 45° .



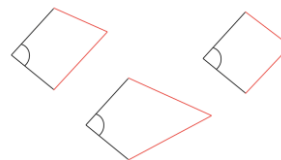
- 3b. Rectangle, all angles are 90° or two types of parallelogram with 2 angles of 135° and 2 angles of 45° .



- 4a. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:



- 4b. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:



Expected

- 5a. Examples of differences (Need 2):
The angles of the first shape are NOT 90° while the second are.
All four sides on the first shape are equal.

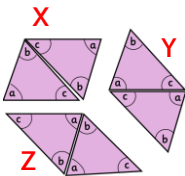
- 5b. Examples of similarities (Need 3):
They each have four sides, they are both quadrilaterals. In both, the opposite sides are parallel to each other. The diagonal of both are perpendicular to each other when they cross.
Their angles total is 360°

Parallelogram and rectangle

- 6a. Incorrect, the sum of the angles of a quadrilateral are 360° .

- 7a. 3 options of parallelogram:

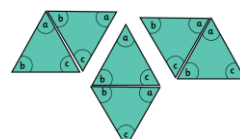
X = 2 angles of 75° , 2 of 105°
Y = 2 angles of 45° , 2 of 135°
Z = 2 angles of 60° , 2 of 120°



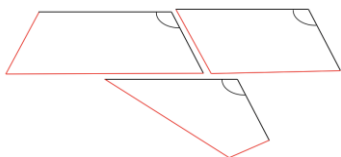
- 6b. Incorrect, this is true for rectangles and squares but not parallelograms, trapezium or rhombus.

- 7b. 3 options of parallelogram:

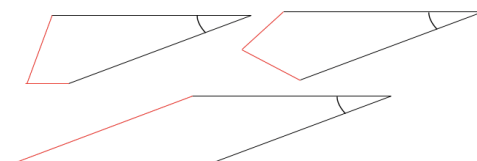
All:
2 angles of 60° , 2 of 120°



- 8a. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:



- 8b. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:



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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 1 only has one.

- 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° .

Trapezium and Parallelogram

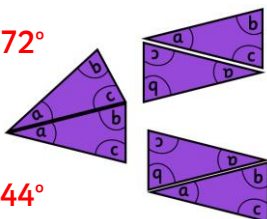
- 10a. True, you can use your knowledge of the sum of angles being 360° . Plus knowledge of angles which are supplementary (adding to 180°) and complementary (adding to 90°) to calculate the remaining angles.

- 11a. 1 option of parallelogram:

2 angles of 108° , 2 of 72°

1 option of rhombus:

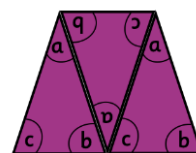
3 angles of 72° , 1 of 144°



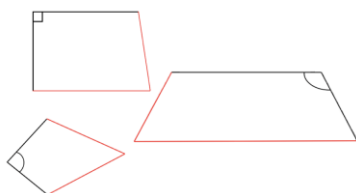
- 10b. Incorrect, obtuse means more than 90° and not all angles can be obtuse in a parallelogram, although often two will be obtuse the others are then acute. Also squares and rectangles are parallelograms with no obtuse angles.

- 11b. 1 option of trapezium:

2 angles of 74° , 2 of 106°



- 12a. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:



- 12b. Example answers, angles should also be labelled O = obtuse A = acute R = right angles:

