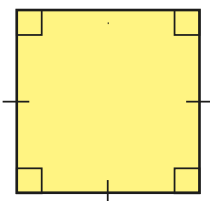


Angles in special quadrilaterals

1 Work out the sum of the angles in each shape.

a)



360°

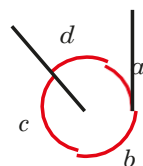
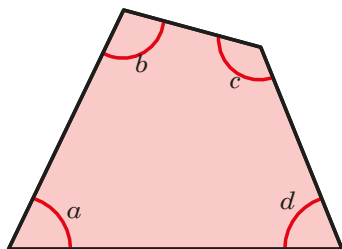
What do you notice?

b)



360°

2 The diagrams show the four vertices of a quadrilateral arranged around a point.



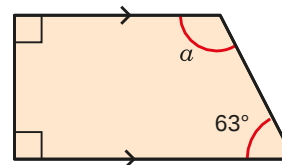
What do the diagrams illustrate about the sum of the angles in a quadrilateral?

Complete the sentence.

Angles in a quadrilateral sum to 360°

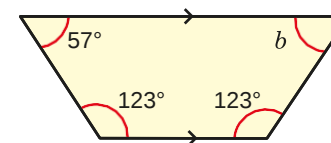
3 Work out the size of the unknown angle in each trapezium.

a)



$a = 117^\circ$

b)

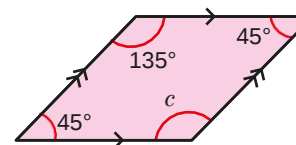


$b = 57^\circ$

c) What is the same and what is different about the trapeziums?

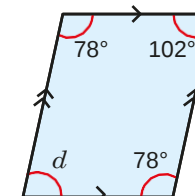
4 Work out the sizes of the unknown angles.

a)



$c = 135^\circ$

b)



$d = 102^\circ$

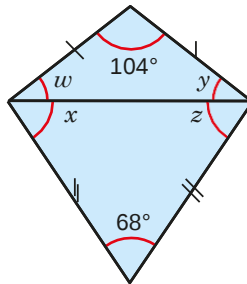
c) What do you notice about opposite angles in a parallelogram?

They are equal.

5

Two isosceles triangles are joined to form a kite.

a) Work out the sizes of the unknown angles.



$$w = 38^\circ \quad y = 38^\circ \quad x = 56^\circ \quad z = 56^\circ$$

b) Work out $w + x$.

$$94^\circ$$

c) Work out $y + z$.

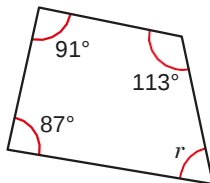
$$94^\circ$$

What do you notice? Talk about it with a partner.

6

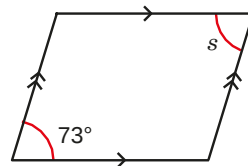
Work out the sizes of the unknown angles.

a)



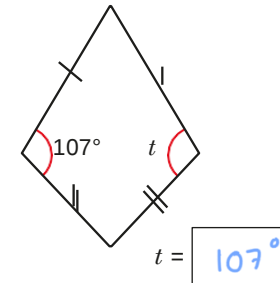
$$r = 69^\circ$$

b)



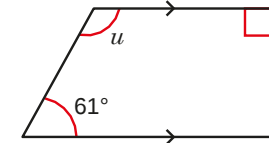
$$s = 73^\circ$$

c)



$$t = 107^\circ$$

d)



$$u = 119^\circ$$

Compare your reasoning with a partner.

7

Teddy is drawing a quadrilateral.

My quadrilateral has exactly three right-angles.



Is Teddy's quadrilateral possible? No

Explain your answer.

$$90 \times 3 = 270 \quad 360 - 270 = 90$$

If three angles were right angles the fourth would also have to be a right angle.