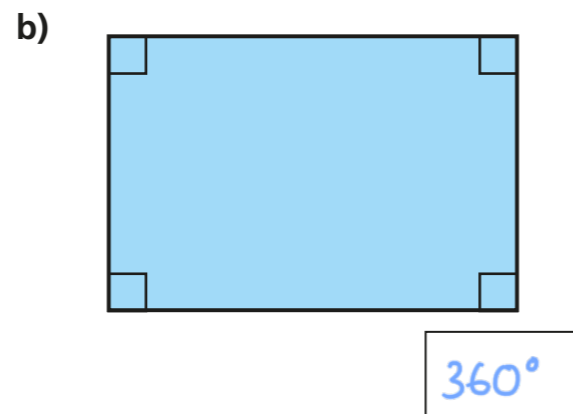
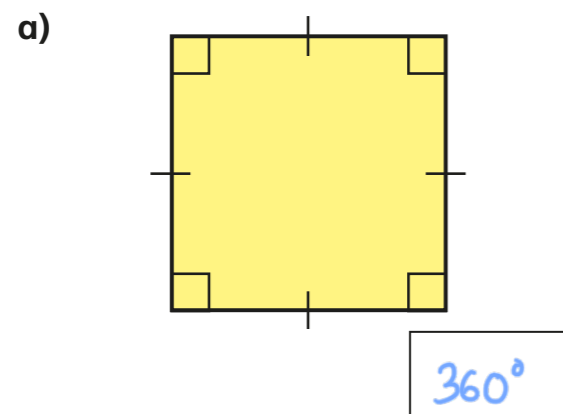


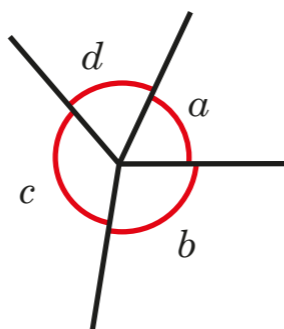
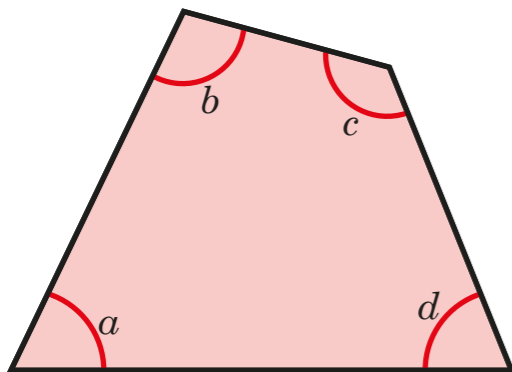
Angles in special quadrilaterals

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



What do you notice?

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

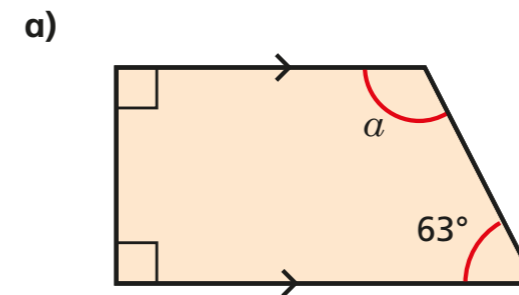


What do the diagrams illustrate about the sum of the angles in a quadrilateral?

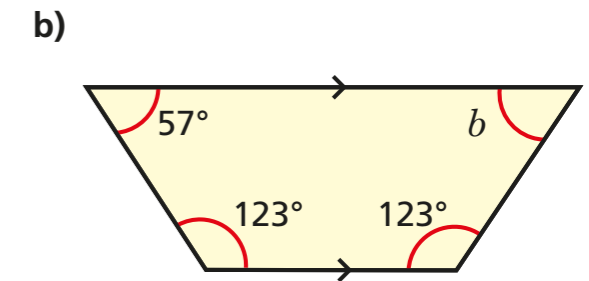
Complete the sentence.

Angles in a quadrilateral sum to 360°

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



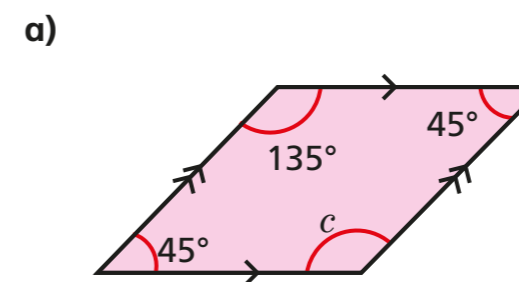
$a = 117^\circ$



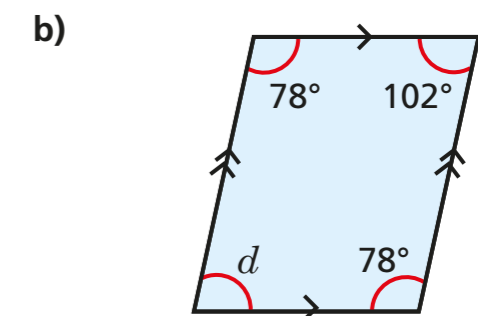
$b = 57^\circ$

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

4 Work out the sizes of the unknown angles.



$c = 135^\circ$



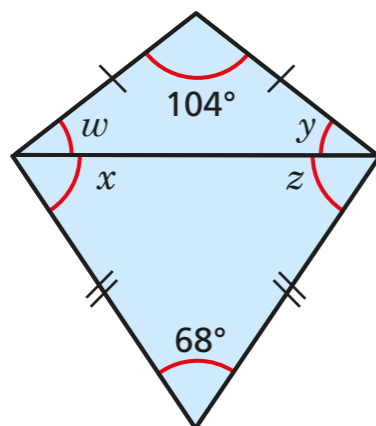
$d = 102^\circ$

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.



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

b) Work out $w + x$.

94°

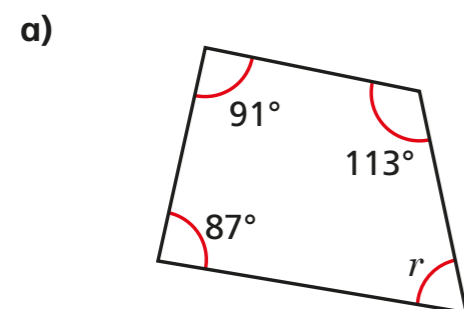
c) Work out $y + z$.

94°

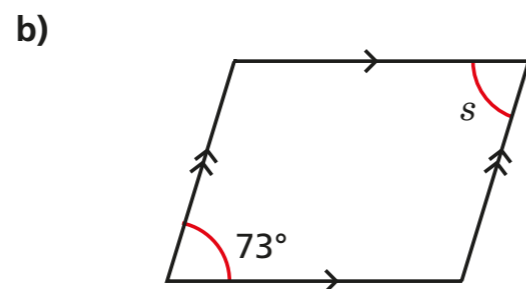
What do you notice? Talk about it with a partner.



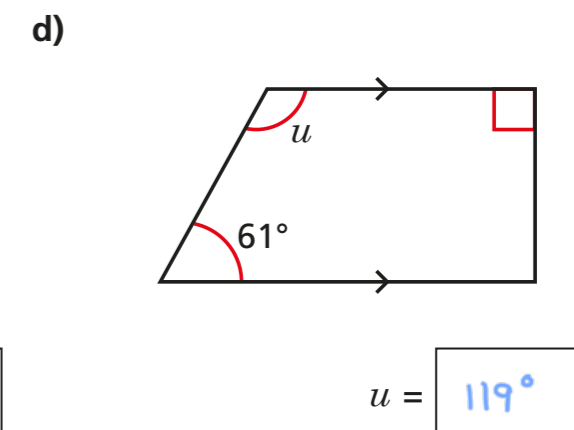
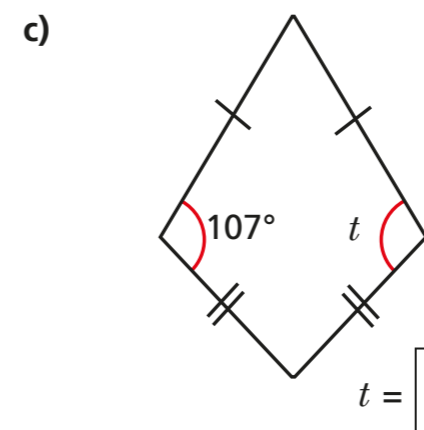
6 Work out the sizes of the unknown angles.



$r = 69^\circ$



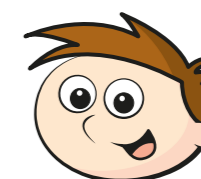
$s = 73^\circ$



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.

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

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