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

a)

b)

$360°$

$360°$
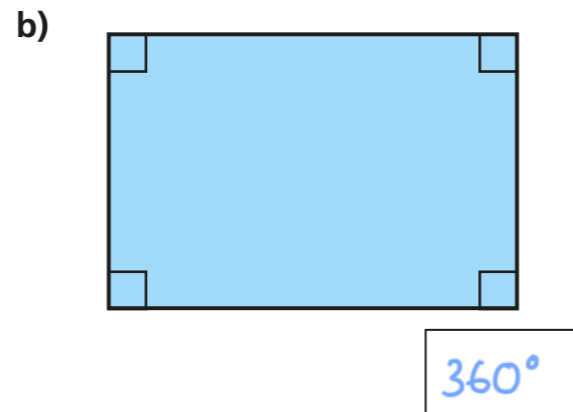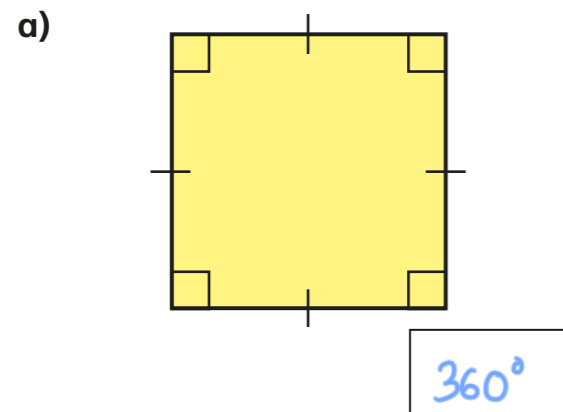
What do you notice?

2 The diagrams show the four vertices of a quadrilateral arranged around a point.
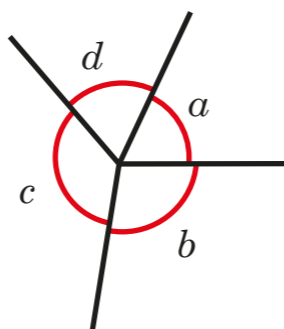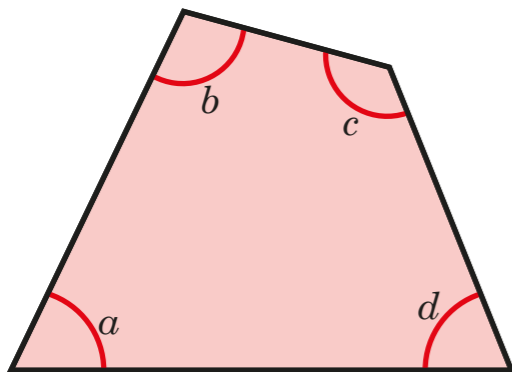
What do the diagrams illustrate about the sum of the angles in a quadrilateral?
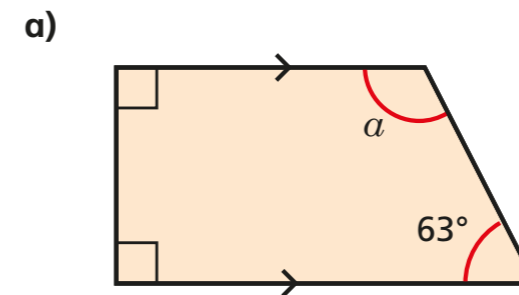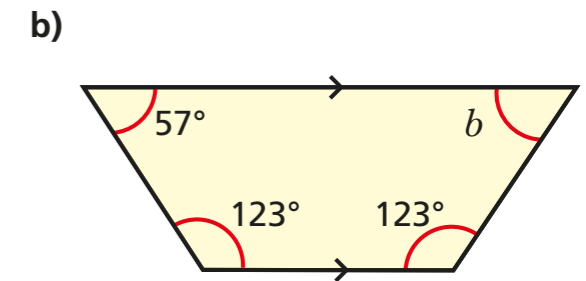
Complete the sentence.

Angles in a quadrilateral _sum to 360°_

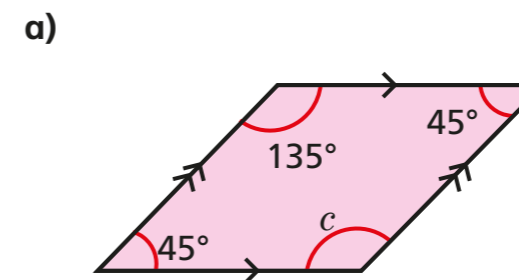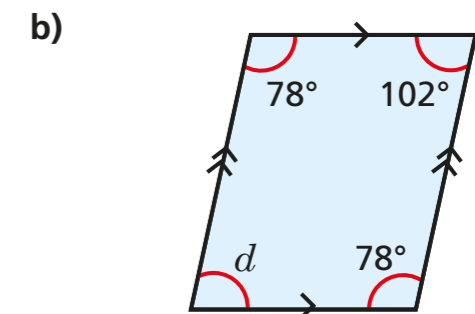**3** Work out the size of the unknown angle in each trapezium.

a)

b)

$57°$ b

$123°$ $123°$

a

$63°$

$a = $ $117°$

$b = $ $57°$

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

4 Work out the sizes of the unknown angles.

a)

b)

$45°$

$135°$

c

$45°$

$78°$ $102°$

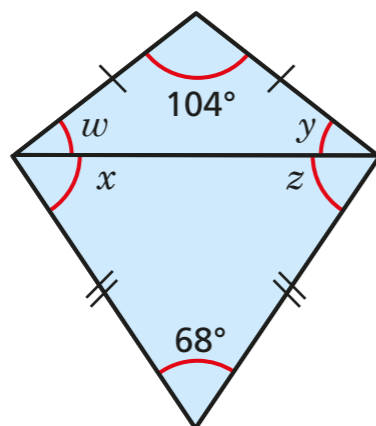d $78°$

$c = $ $135°$

$d = $ $102°$

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.

104°
w
x
y
z
68°

$w =$ 38° $y =$ 38° $x =$ 56° $z =$ 56°
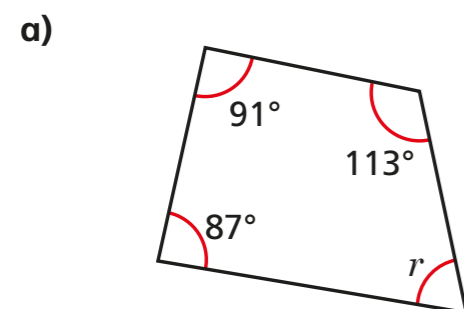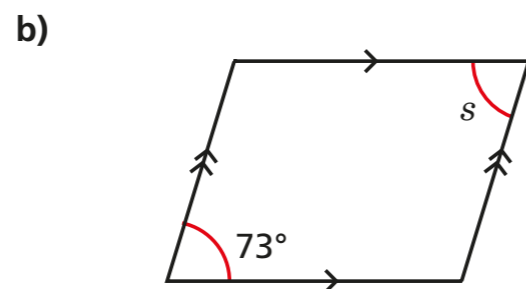
b) Work out $w + x$.

94°

c) Work out $y + z$.
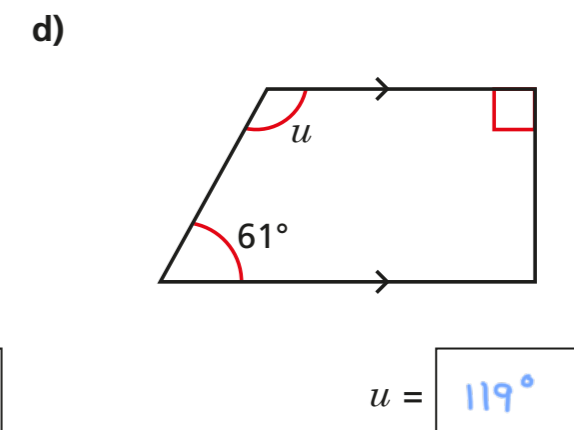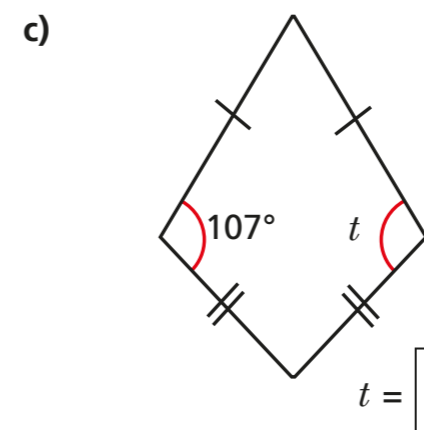
94°

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

6 Work out the sizes of the unknown angles.

a)

91°
113°
87°
r

b)

s
73°

$r =$ 69° $s =$ 73°
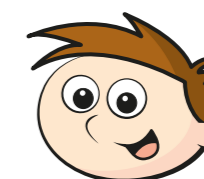
c)

107°   t

$t =$ 107°

d)

u
61°

$u =$ 119°

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 × 3 = 270   360 − 270 = 90

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