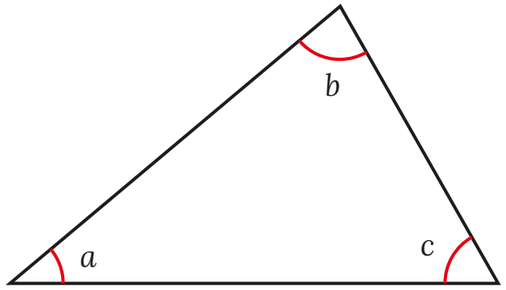
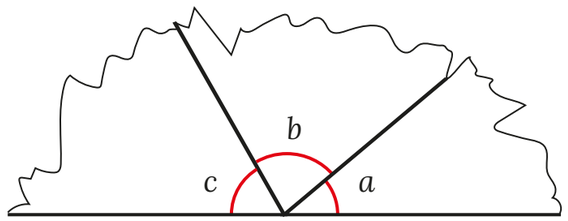
Angles in a triangle

1 Here is a triangle.



a) The three vertices are torn off the triangle and arranged on a straight line.



What is the sum of the three angles? ☐°

How do you know?

_____

b) Now measure the sizes of angles a, b and c in the triangle.

a = ☐° b = ☐° c = ☐°

c) What is the total of angles a, b and c? ☐°

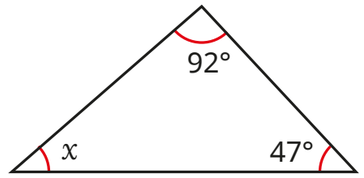
d) Complete the sentence.

Angles in a triangle _____

2 Work out the sizes of the unknown angles.

Give reasons for your answers.

a)

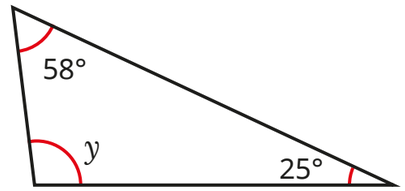


x = ☐° because _____

_____

_____

b)

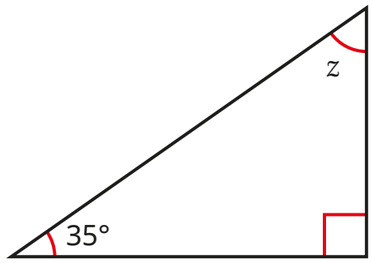


y = ☐° because _____

_____

_____

c)

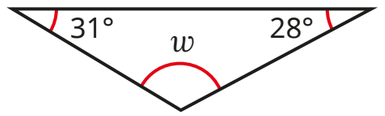


z = ☐° because _____

_____

_____

d)



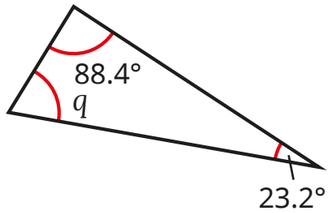
w = ☐° because _____

_____

_____

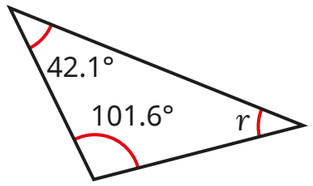
3 Work out the sizes of the unknown angles.

a)



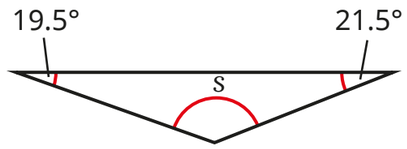
q = ☐ °

b)



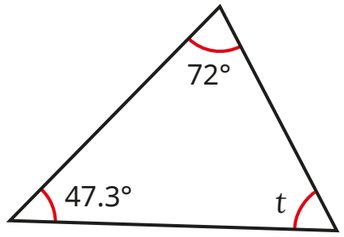
r = ☐ °

c)



s = ☐ °

d)



t = ☐ °

Discuss your reasons with a partner.

4 **a)** Two angles in a triangle are 42° and 57°.

What is the size of the third angle?

☐ °

b) Two of the angles in a triangle are 12°.

What is the size of the third angle?

☐ °

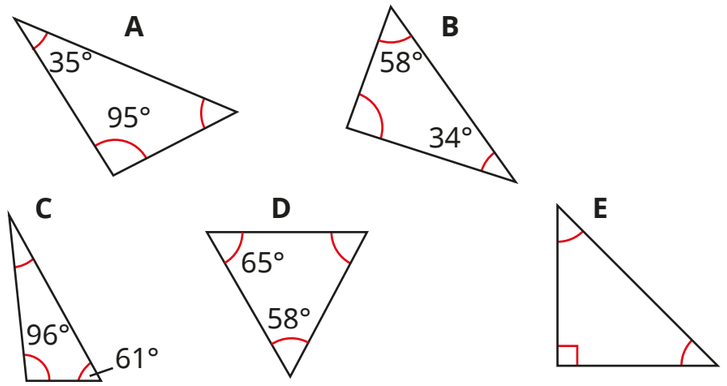
c) One of the angles in a triangle is 38°.

Another angle is twice the size of the first angle.

What is the size of the third angle?

☐ °

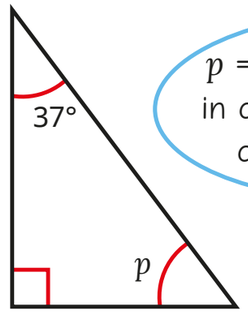
5 Sort the triangles into the table.



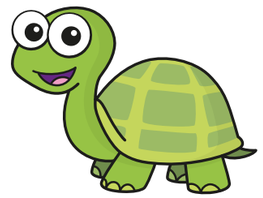
0 acute angles	1 acute angle	2 acute angles	3 acute angles

Are any of the columns empty? Why?

6



$p = 143°$ because angles in a triangle sum to 180° and $180 - 37 = 143$



Do you agree with Tiny? _____

Explain your answer.