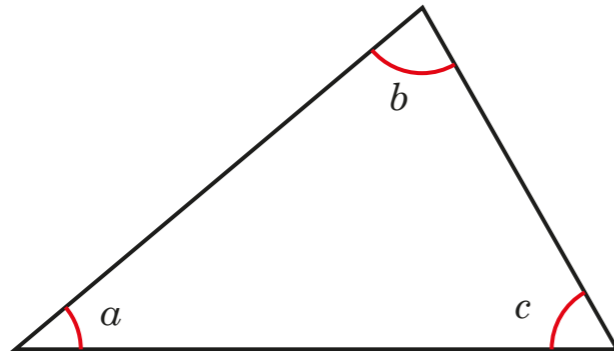
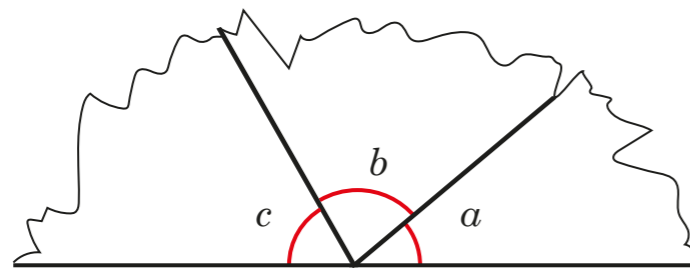


# Angles in a triangle

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  $c$ ?

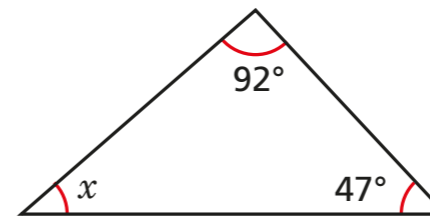
d) Complete the sentence.

Angles in a triangle \_\_\_\_\_

2 Work out the sizes of the unknown angles.

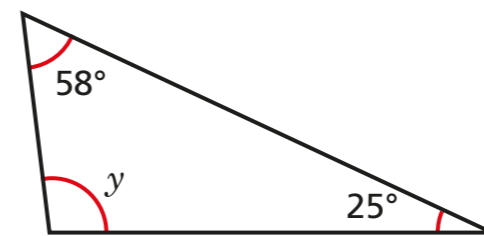
Give reasons for your answers.

a)



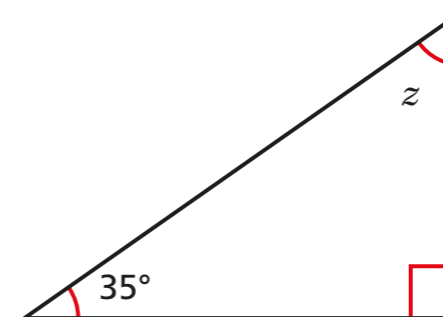
$x =$   because \_\_\_\_\_  
\_\_\_\_\_

b)



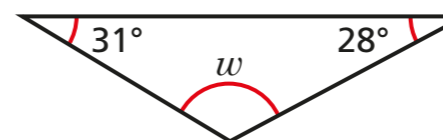
$y =$   because \_\_\_\_\_  
\_\_\_\_\_

c)



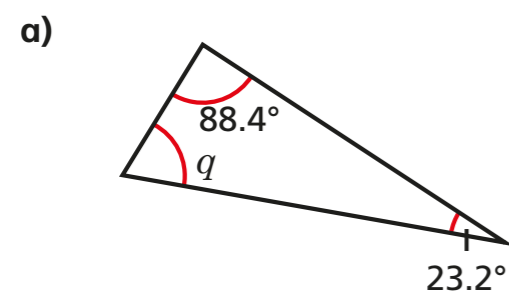
$z =$   because \_\_\_\_\_  
\_\_\_\_\_

d)

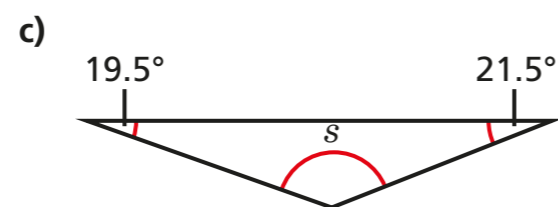


$w =$   because \_\_\_\_\_  
\_\_\_\_\_

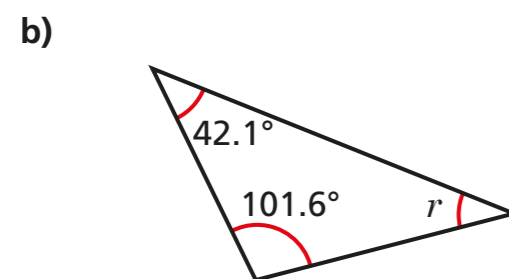
3 Work out the unknown angles.



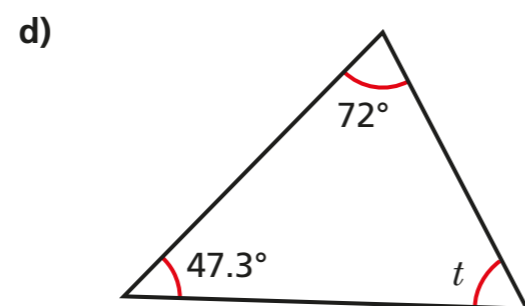
$q =$



$s =$



$r =$



$t =$

Discuss your reasons with a partner.

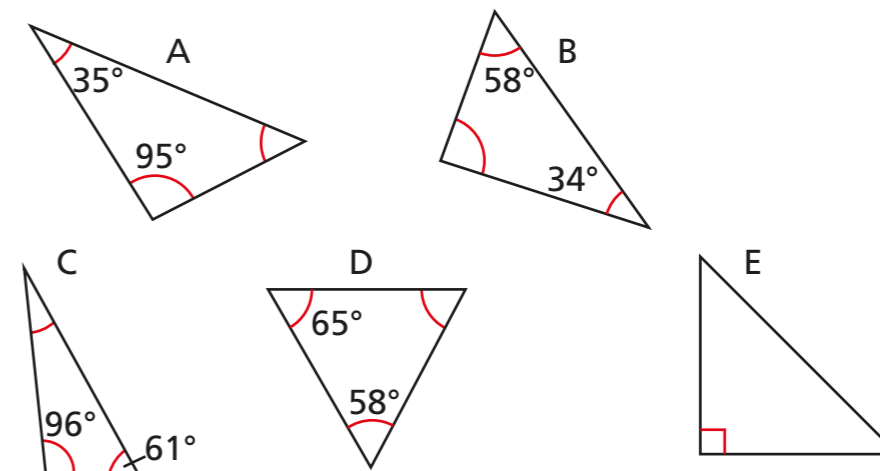


4 a) Two angles in a triangle are  $42^\circ$  and  $57^\circ$ .  
What is the size of the third angle?

b) Two of the angles in a triangle are  $12^\circ$ .  
What is the size of the third angle?

c) One of the angles in a triangle is  $38^\circ$ . 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

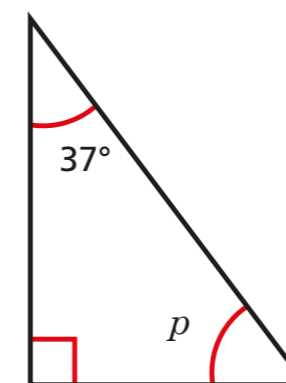
Are any of the columns empty? Why?

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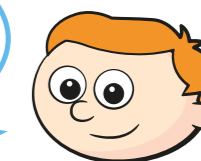


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6



$p = 143^\circ$  because angles in a triangle sum to  $180^\circ$  and  $180 - 37 = 143$



Do you agree with Ron? \_\_\_\_\_

Explain your answer.

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