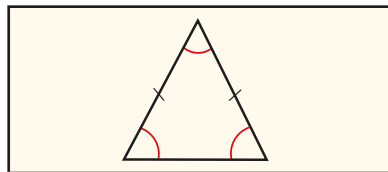
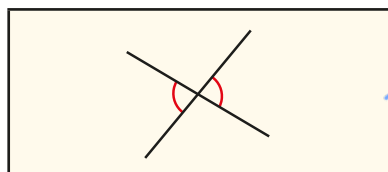


Angles in a triangle – missing angles

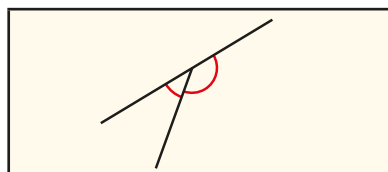
1 Match each diagram to the correct rule.



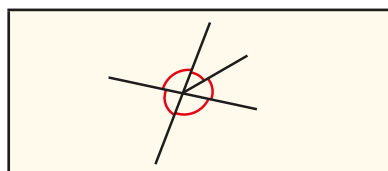
Angles on a straight line sum to 180°



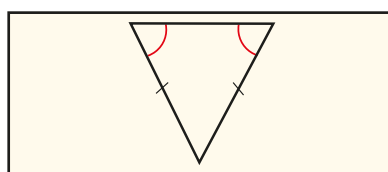
Angles around a point sum to 360°



Angles in a triangle sum to 180°



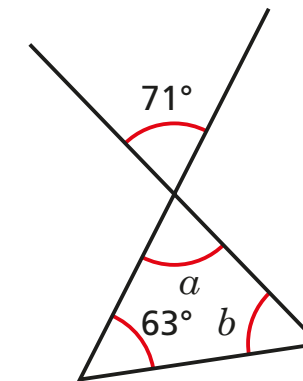
In an isosceles triangle, two angles are equal



Vertically opposite angles are equal

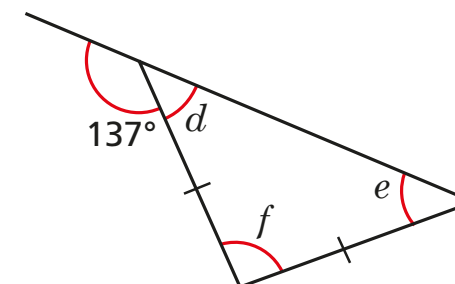
2 Work out the sizes of the unknown angles.
Give reasons for each stage of your working.

a)



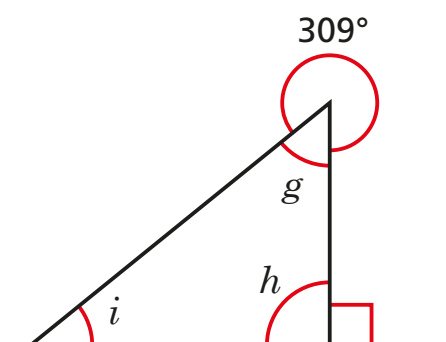
$a = 71^\circ$ because vertically opposite angles are equal
 $b = 46^\circ$ because angles in a triangle sum to 180°

b)



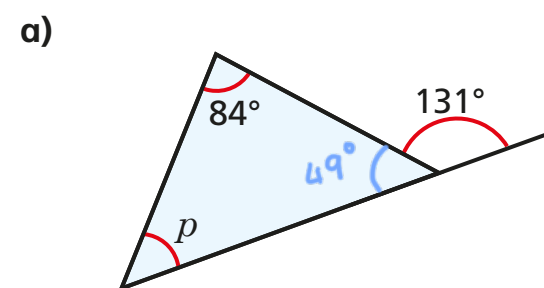
$d = 43^\circ$ because angles on a straight line sum to 180°
 $e = 43^\circ$ because in an isosceles triangle two angles are equal
 $f = 94^\circ$ because angles in a triangle sum to 180°

c)

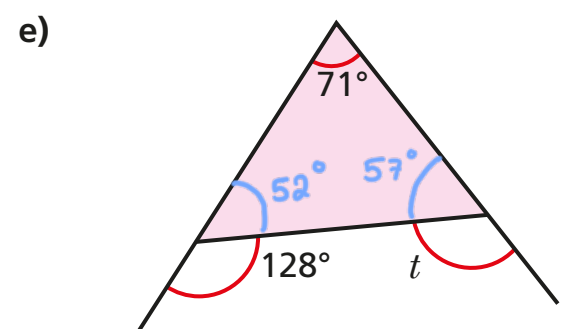


$g = 51^\circ$ because angles around a point sum to 360°
 $h = 90^\circ$ because angles on a straight line sum to 180°
 $i = 39^\circ$ because angles in a triangle sum to 180°

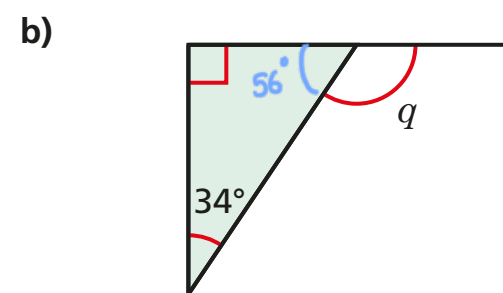
3 Work out the sizes of the angles marked with letters.



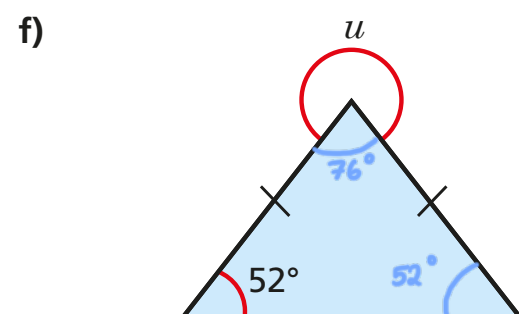
$$p = 47^\circ$$



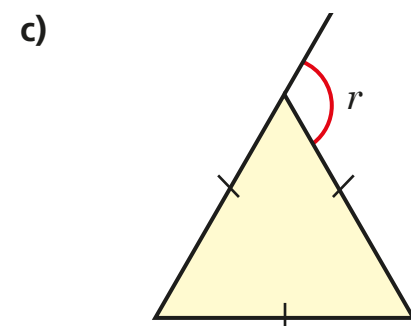
$$t = 123^\circ$$



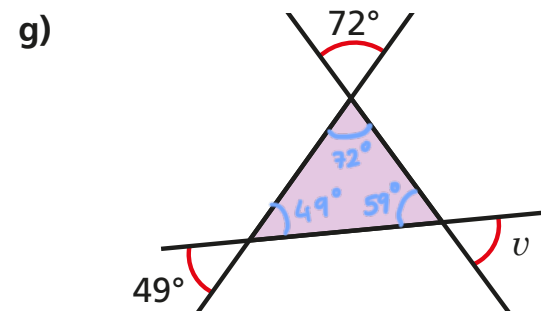
$$q = 124^\circ$$



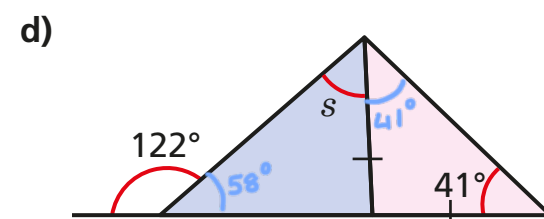
$$u = 284^\circ$$



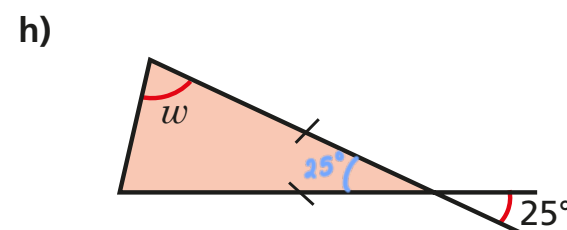
$$r = 120^\circ$$



$$v = 59^\circ$$



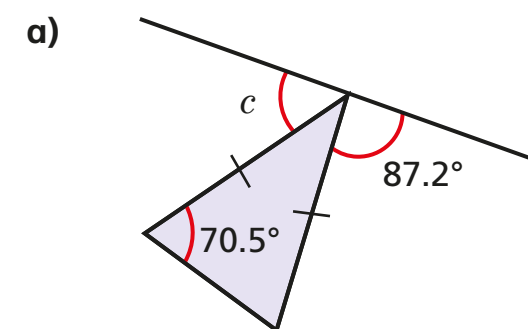
$$s = 40^\circ$$



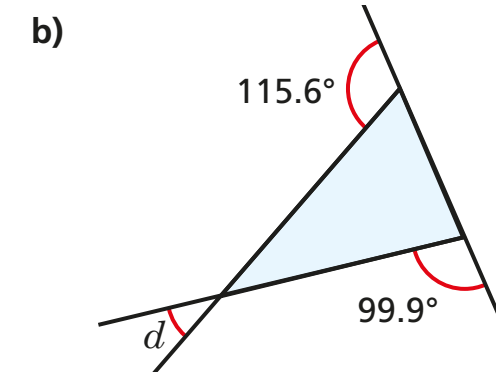
$$w = 77.5^\circ$$

Talk about your reasons with a partner.

4 Work out the sizes of the unknown angles.

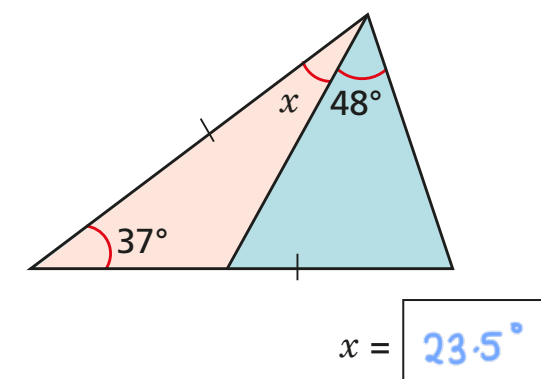


$$c = 53.8^\circ$$



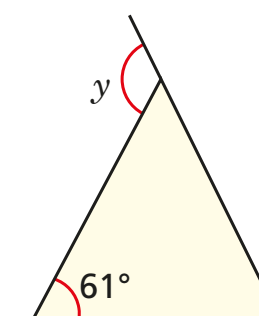
$$d = 35.5^\circ$$

5 Work out the size of angle x.



$$x = 23.5^\circ$$

6 Here is an isosceles triangle. Find two possible sizes of angle y.



$$y = 122^\circ \text{ or } 120.5^\circ$$

