Angles in a triangle – special cases
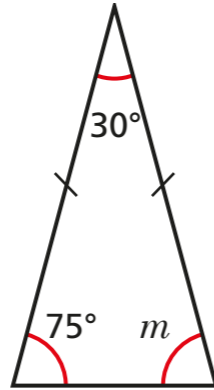
1 Here is a triangle.

a) What type of triangle is it?

_____
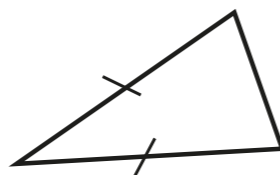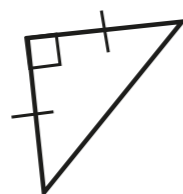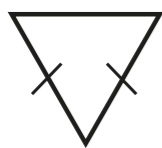
How do you know?
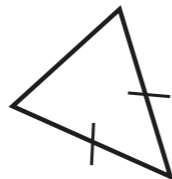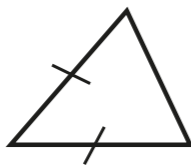
_____

_____

b) Work out the size of angle m.
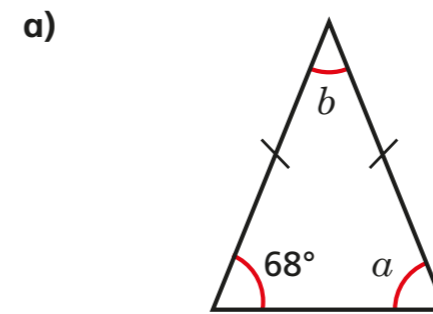
c) What do you notice?

d) Complete the sentence to describe the angles in an isosceles triangle.
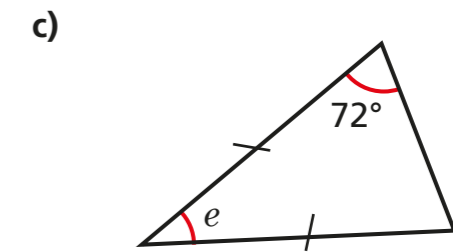
In an isosceles triangle _____

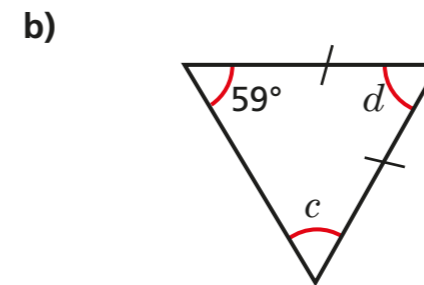**2** Identify and label the angles that will be equal in each triangle.
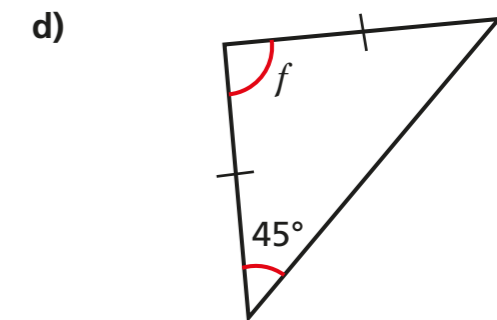
3 Work out the sizes of the unknown angles.

a)

$a =$ ☐ $b =$ ☐
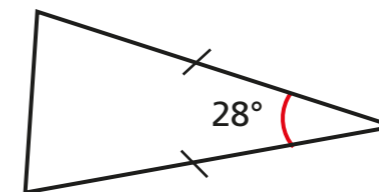
b)

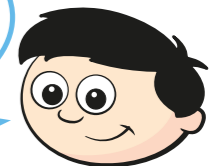$c =$ ☐ $d =$ ☐

c)

$e =$ ☐

d)

$f =$ ☐

Talk about your reasons with a partner.

4 Dexter is working out the unknown angles in triangles.

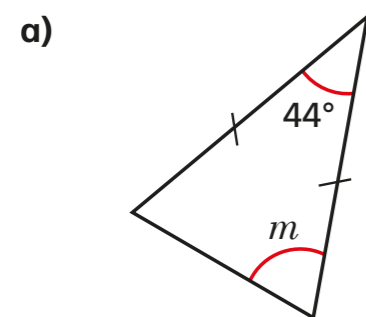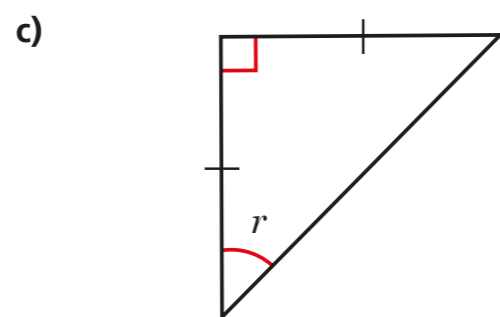> I can't work out either of the missing angles because I don't have enough information.

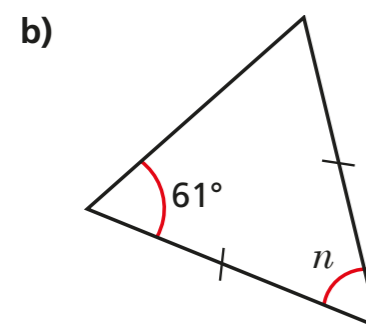Do you agree with Dexter? _____

Explain your answer.

_____
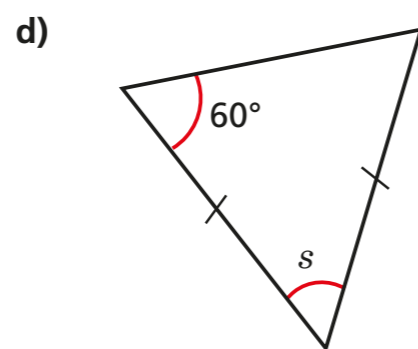
_____

5 Work out the sizes of the unknown angles.

a)

$m = $ ☐

c)

$r = $ ☐

b)

$n = $ ☐

d)

$s = $ ☐

6 Whitney and Jack are working out the angles in this triangle.

I can't work out the angles in this triangle because I don't know any of them.

Whitney

I know the size of all the angles in this triangle.
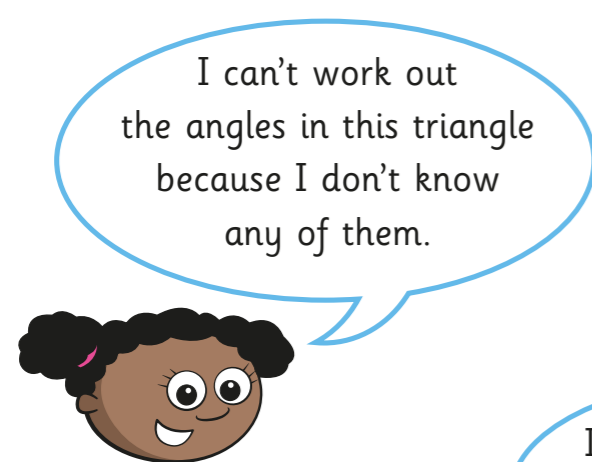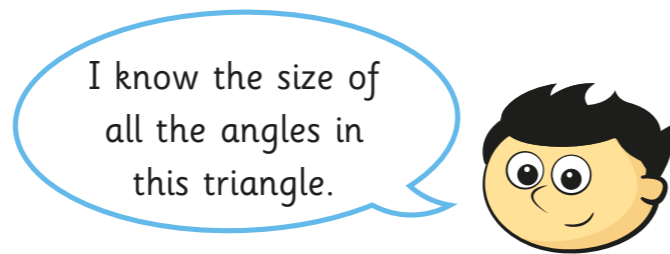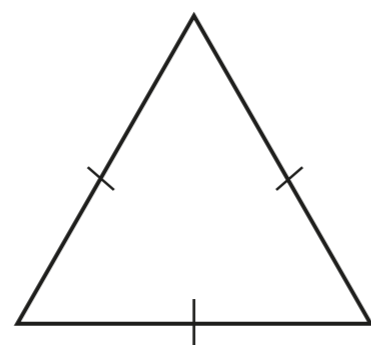
Jack

Who do you agree with? _____

Talk about it with a partner.

7 Are the statements true or false?

a) Every isosceles triangle is equilateral. _____

b) Every equilateral triangle is isosceles. _____

c) A right-angled triangle can be equilateral. _____

d) A right-angled triangle can be isosceles. _____

Explain your answers to a partner.

8 Two angles in a triangle are 43° and 74°.

Is the triangle isosceles? _____

Show your workings.

9 One angle in an isosceles triangle is 29°.

What could the other angles be? Give two possible answers.

_____

10 Angle b is twice the size of angle a.

Work out the size of angle c.

☐