Understand and use basic angle rules and notation

1 Complete the angle rules.

a) Angles on a straight line sum to 180°.

b) Angles around a point sum to 360°.

c) Vertically opposite angles are equal.

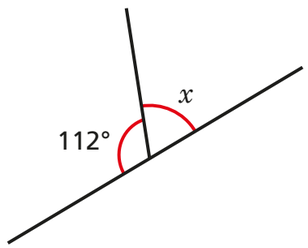
d) Angles in a triangle sum to 180°.

e) Angles in a quadrilateral sum to 360°.

2 Work out the sizes of the unknown angles.

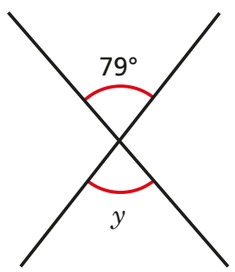
Give reasons for your answers.

a)



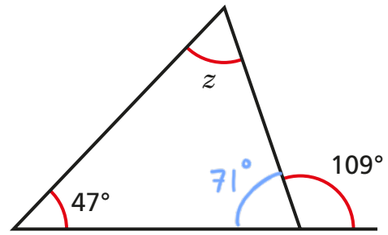
$x =$ 68° because angles on a straight line sum to 180°.

b)



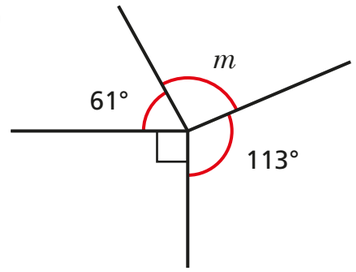
$y =$ 79° because vertically opposite angles are equal

c)



$z =$ 62° because angles on a straight line sum to 180° and angles in a triangle sum to 180°.

d)



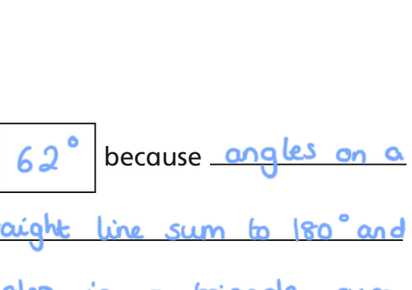
$m =$ 96° because angles around a point sum to 360°.

3 **a)** Write the size of the given angles.

ABD 38°

EBC 44°

DBE 97°



b) Is ABC a straight line? NO

How do you know?

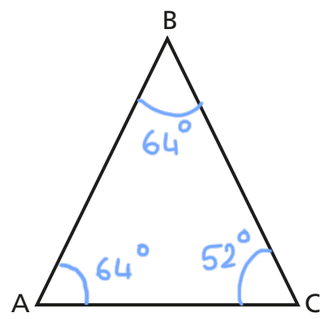
4 Here is a triangle.

a) ∠BAC = 64°

Show this information on the triangle.

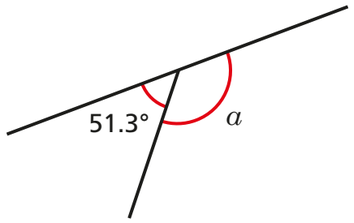
b) Given that ∠BCA = 52°,
is triangle ABC isosceles? Yes

Explain your answer.



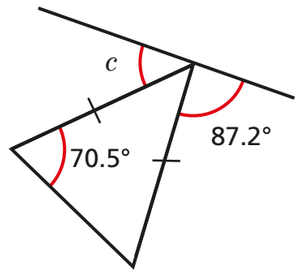
5 Work out the size of the unknown angles.

a)



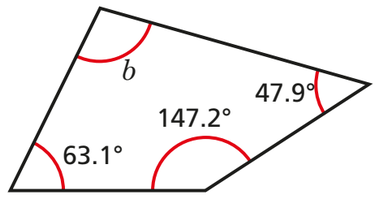
$a =$ 128·7°

c)



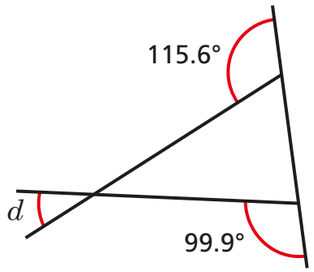
$c =$ 53·8°

b)



$b =$ 101·8°

d)

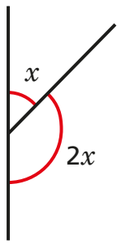


$d =$ 35·5°

Discuss your reasons with a partner.

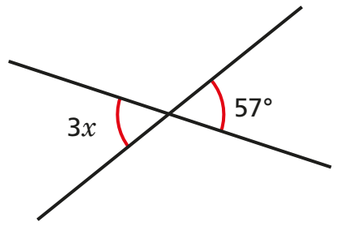
6 Work out the value of x.

a)



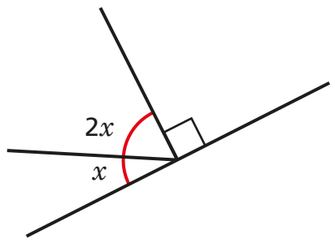
$x =$ 60°

c)



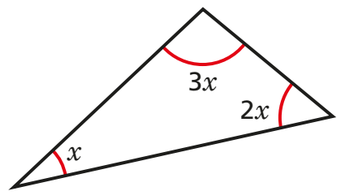
$x =$ 19°

b)



$x =$ 30°

d)



$x =$ 30°

7 The angles in a triangle are in the ratio 2 : 3 : 5

Is the triangle a right-angled triangle? Yes

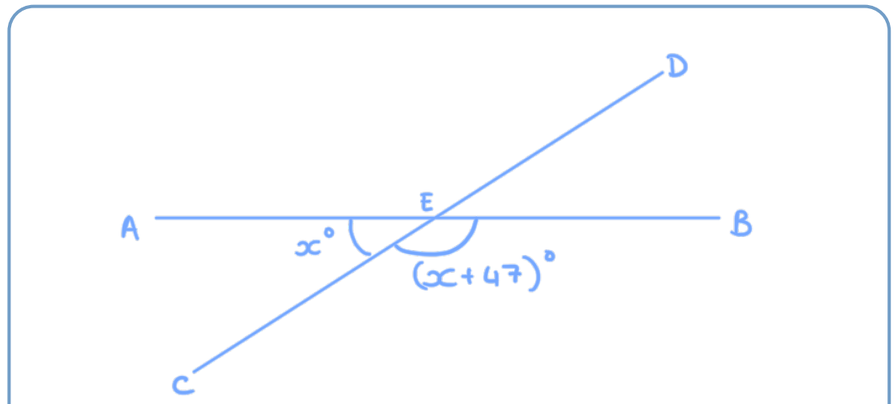
Show your workings.

8 AB and CD are straight lines.

The lines AB and CD intersect at point E.

Angle CEB is 47° greater than angle AEC.

a) Draw a diagram to represent this information.



b) Work out the size of each angle.

Give your answers using correct angle notation.

∠AEC = 66·5° ∠DEB = 66·5°

∠CEB = 113·5° ∠AED = 113·5°

Create your own problem like this for a partner.