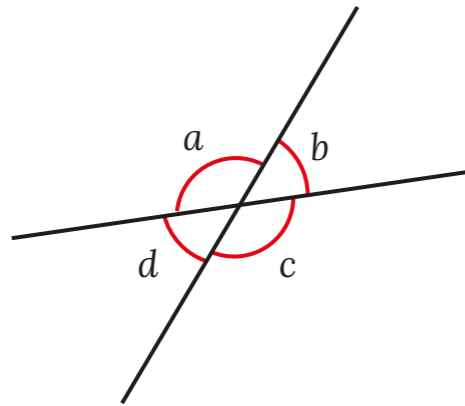


Vertically opposite angles

1 The diagram shows four angles formed by two straight lines.



a) Measure the sizes of the angles.

$a = \square^\circ$ $b = \square^\circ$ $c = \square^\circ$ $d = \square^\circ$

b) What is the total of angles a and b ? \square°

Explain why.

Do any other pairs of angles have this same total?

c) Angles a and c are vertically opposite angles.

What do you notice about the sizes of angles a and c ?

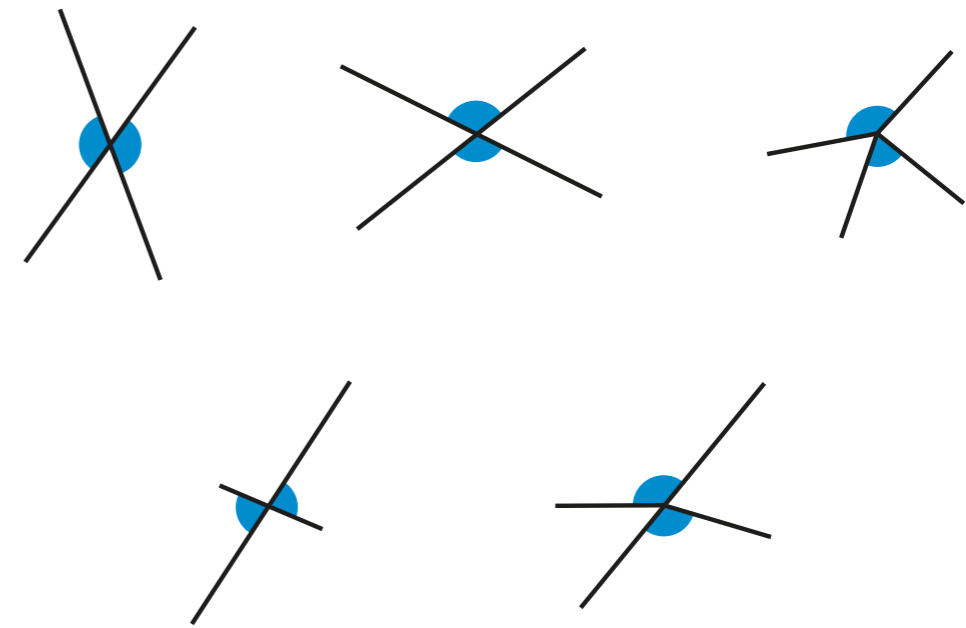
d) Angles b and d are also vertically opposite angles.

What do you notice about the sizes of angles b and d ?

e) Complete the sentence.

Vertically opposite angles _____

2 Tick the pairs of angles that are vertically opposite.

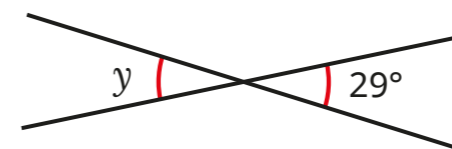


Compare answers with a partner.

3 Work out the sizes of the unknown angles.

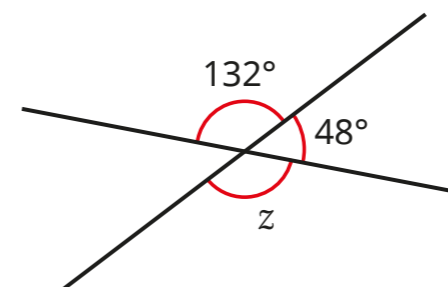
Give reasons for your answers.

a)



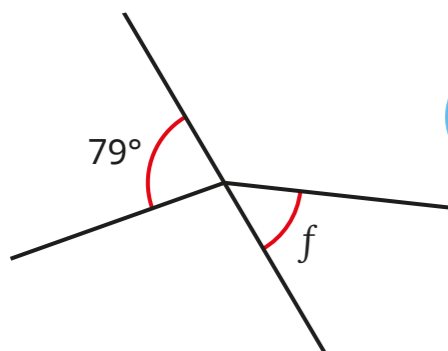
$y = \square^\circ$ because

b)

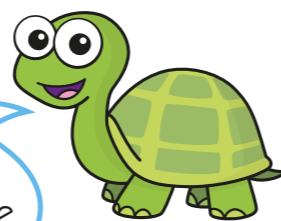


$z = \square^\circ$ because

4 Tiny is working out the size of angle f .



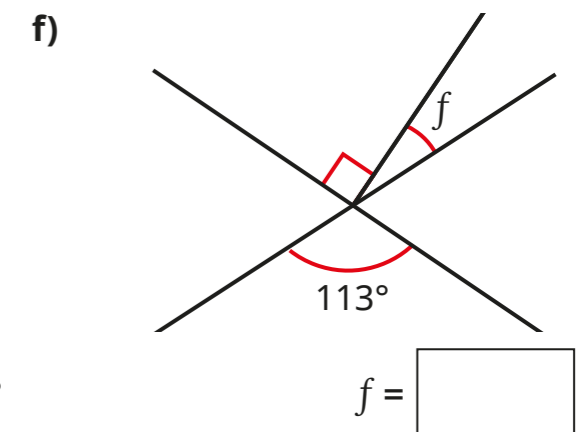
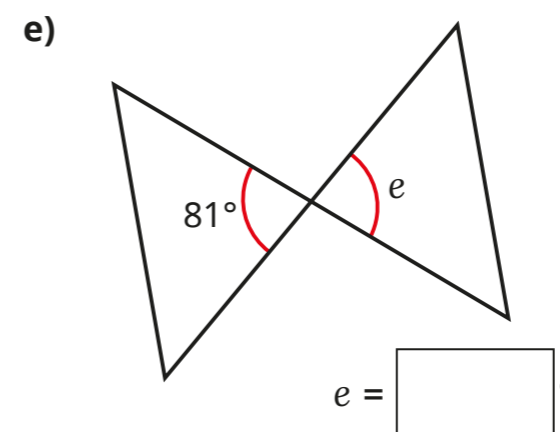
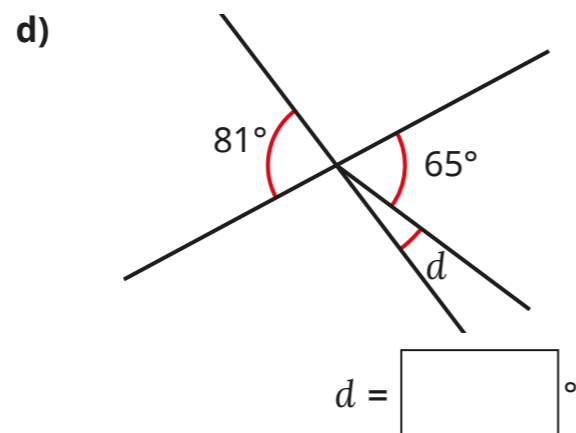
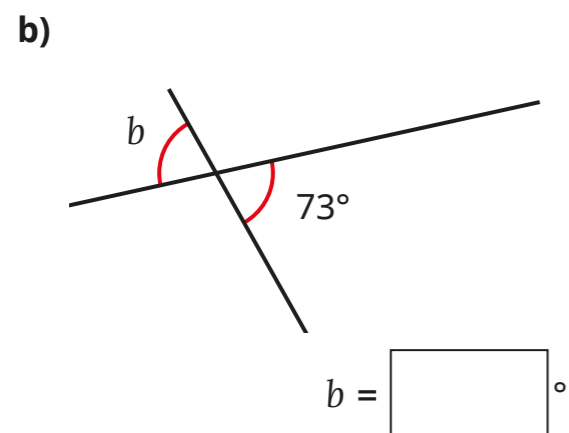
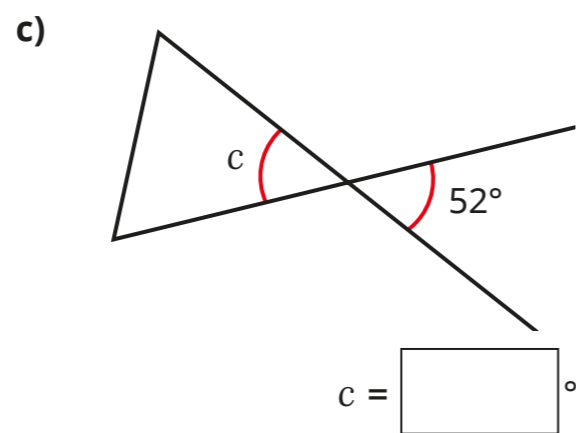
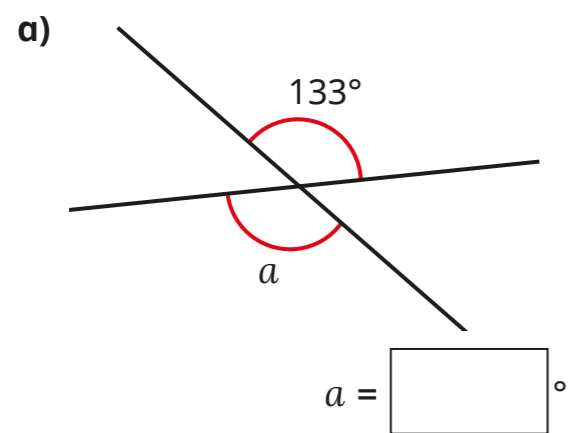
Angle f is equal to 79° because vertically opposite angles are equal.



Do you agree with Tiny? _____

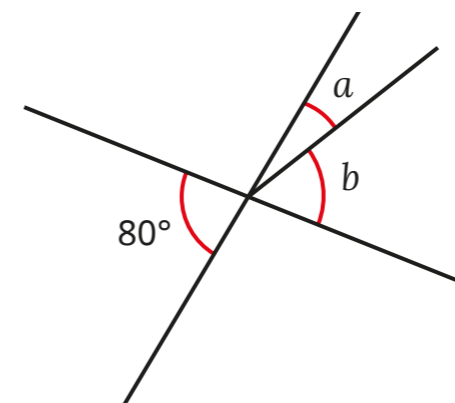
Explain your answer.

5 Work out the sizes of the unknown angles.



Talk about your reasons with a partner.

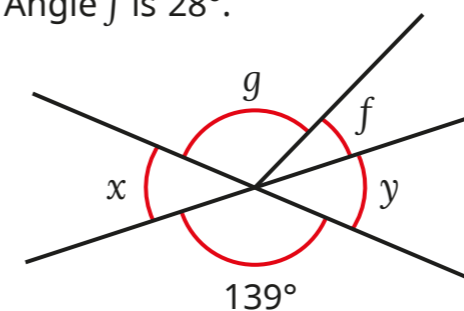
6 Angle b is three times the size of angle a .



Work out the sizes of angles a and b .

$a = \square^\circ$ $b = \square^\circ$

7 Angle f is one quarter of the size of angle g . Angle f is 28° .



Are angles x and y vertically opposite? _____

Explain your answer.