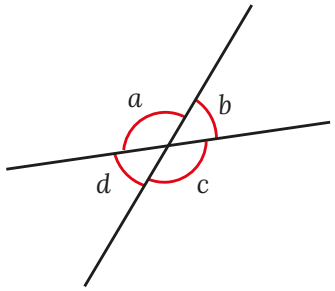
Vertically opposite angles

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



a) Measure the sizes of the angles.

b) What is the total of angles a and b?

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?

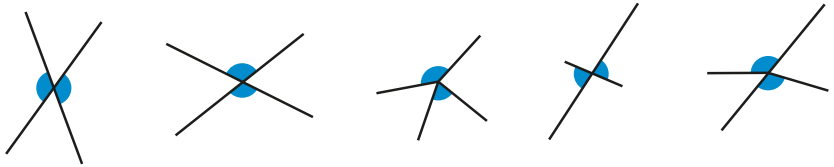
d) Angles b and d are also vertically opposite angles.

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

e) Complete the sentence.

Vertically opposite angles ...

2 Which pairs of angles are vertically opposite?

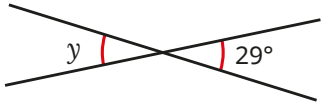


Compare answers with a partner.

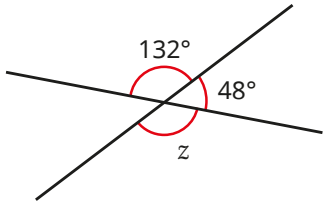
3 Work out the sizes of the unknown angles.

Give reasons for your answers.

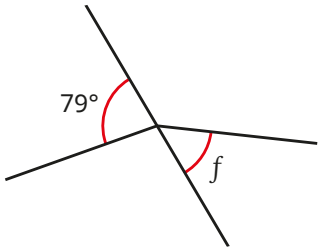
a)

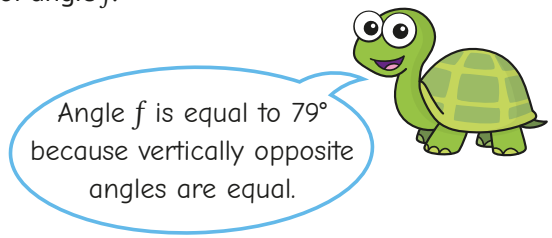


b)



4 Tiny is working out the size of angle f.



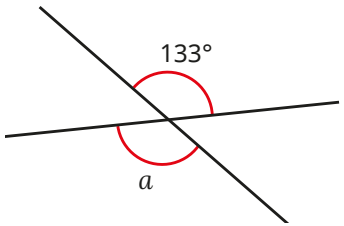


Do you agree with Tiny?

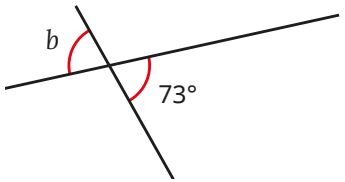
Explain your answer.

5 Work out the sizes of the unknown angles.

a)



b)



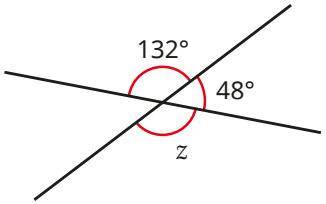
Vertically opposite angles

3 Work out the sizes of the unknown angles.

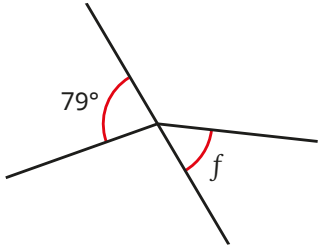
Give reasons for your answers.

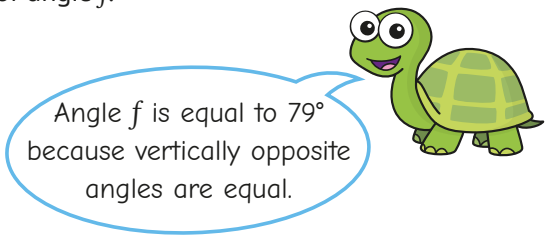
a)

b)



4 Tiny is working out the size of angle f.



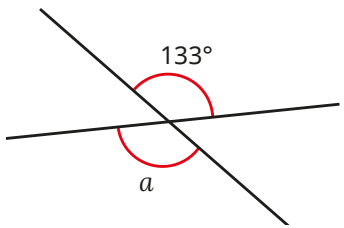


Do you agree with Tiny?

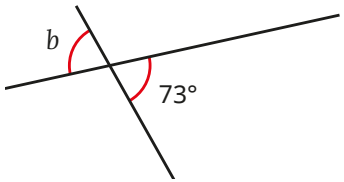
Explain your answer.

5 Work out the sizes of the unknown angles.

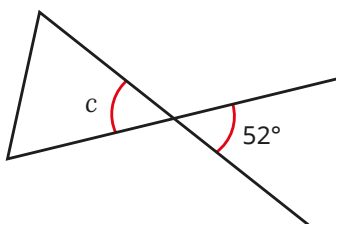
a)



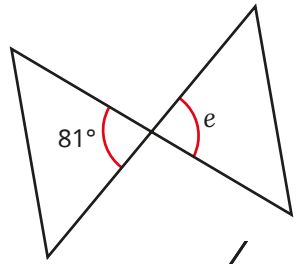
b)



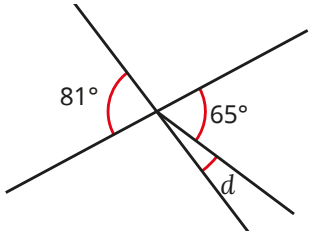
c)



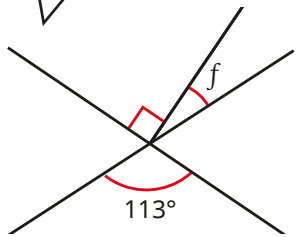
e)



d)

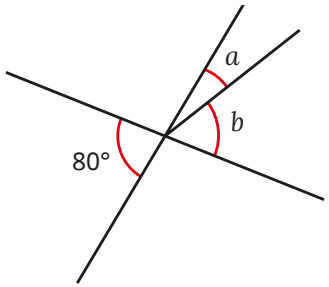


f)



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.

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.