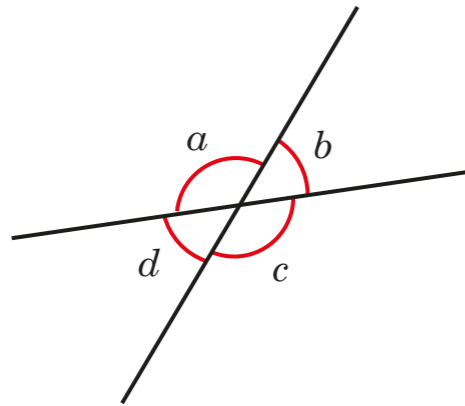


# Vertically opposite angles

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



a) Measure the sizes of the angles.

$a =$    $b =$    $c =$    $d =$

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.

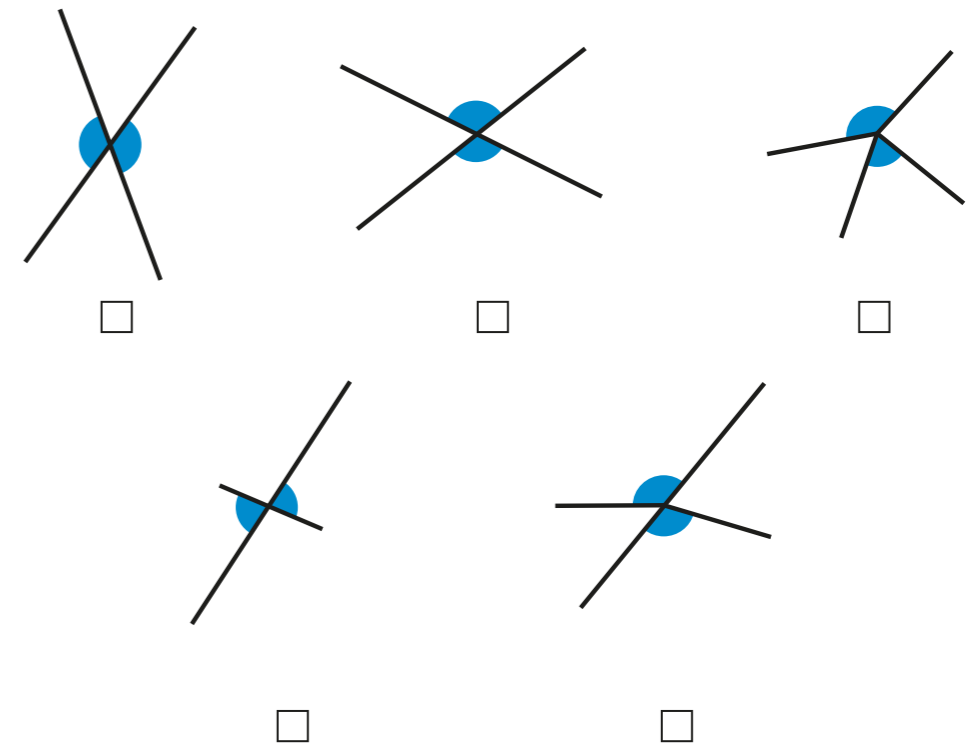
What do you notice about the sizes of angles  $b$  and  $d$ ?

\_\_\_\_\_

e) Complete the sentence.

Vertically opposite angles \_\_\_\_\_

2 Tick the pairs of angles that are vertically opposite.

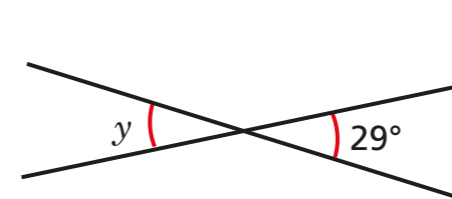


Compare answers with a partner.

3 Work out the sizes of the unknown angles.

Give reasons for your answers.

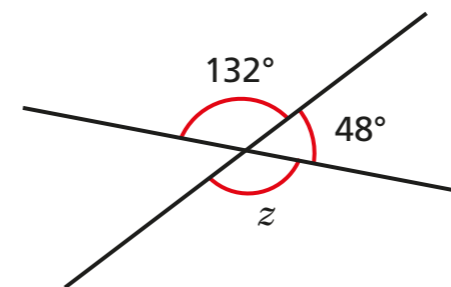
a)



$y =$   because \_\_\_\_\_

\_\_\_\_\_

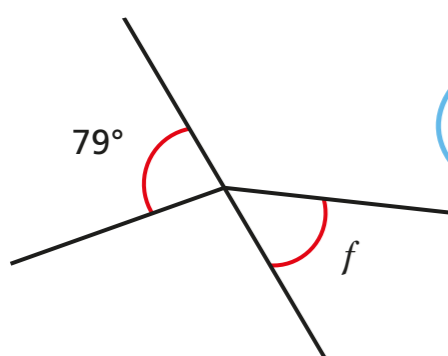
b)



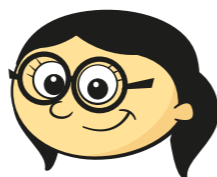
$z =$   because \_\_\_\_\_

\_\_\_\_\_

- 4 Annie is working out the size of angle  $f$ .



Angle  $f$  is equal to  $79^\circ$  because vertically opposite angles are equal.



Do you agree with Annie? \_\_\_\_\_

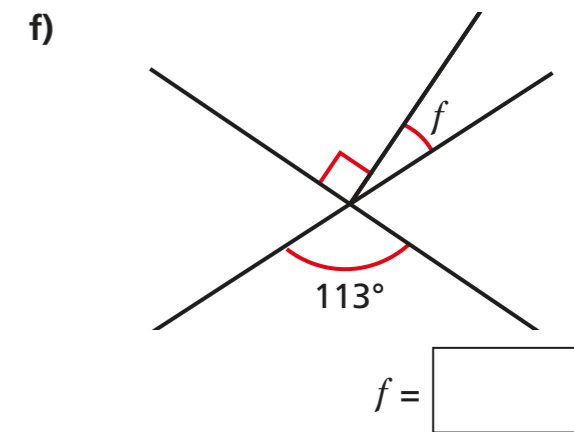
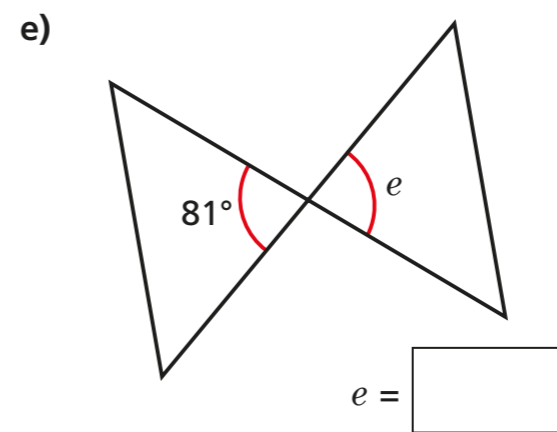
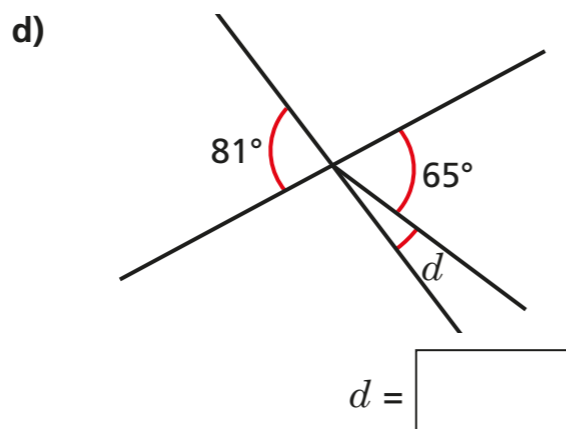
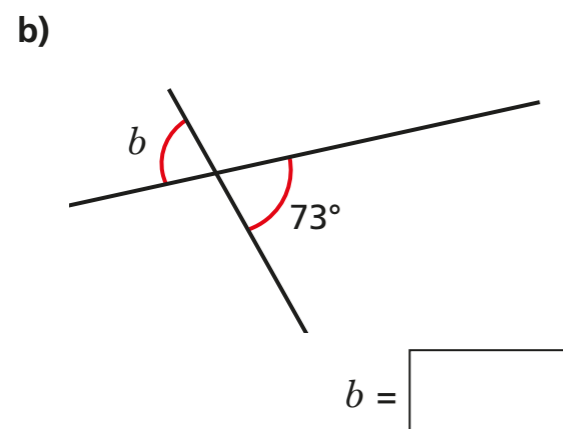
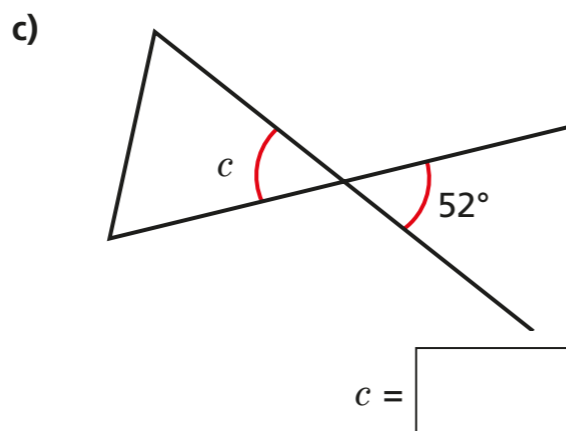
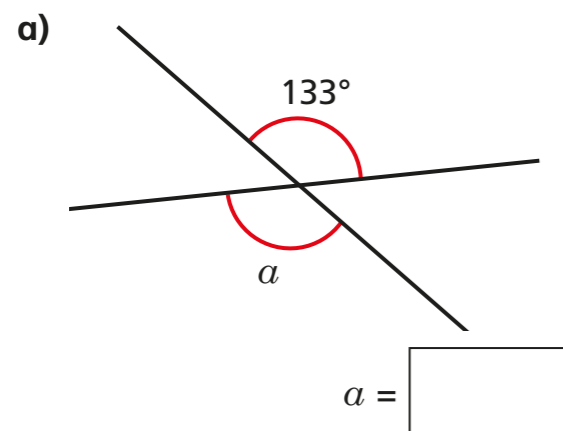
Explain your answer.

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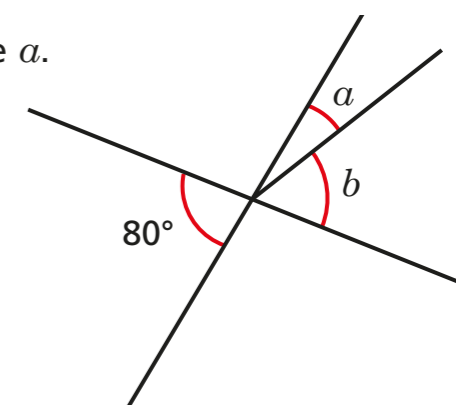
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- 5 Work out the unknown angles.



Talk about your reasons with a partner.

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

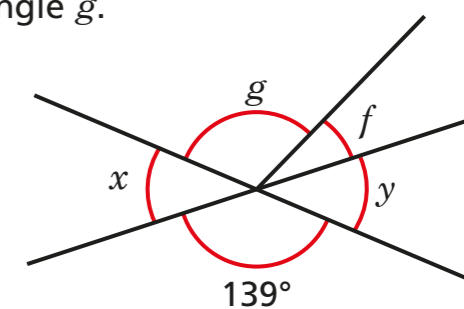


Work out the sizes of angles  $a$  and  $b$ .

$a = \square$        $b = \square$

- 7 Angle  $f$  is one quarter of the size of angle  $g$ .

Angle  $f$  is  $28^\circ$ .



Are angles  $x$  and  $y$  vertically opposite? \_\_\_\_\_

Explain your answer.

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