Area and perimeter

1 Use the words to complete the sentences.

| perimeter | cm² | cm | m |

| area | m² | inside | around |

**Area** is the amount of space _**inside**_ a two-dimensional shape. It can be measured in units such as _**cm²**_ or _**m²**_

**Perimeter** is the distance _**around**_ a two-dimensional shape. It can be measured in units such as _**cm**_ or _**m**_
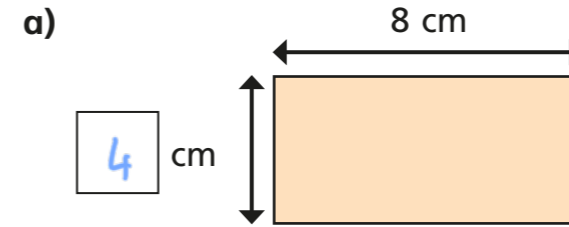
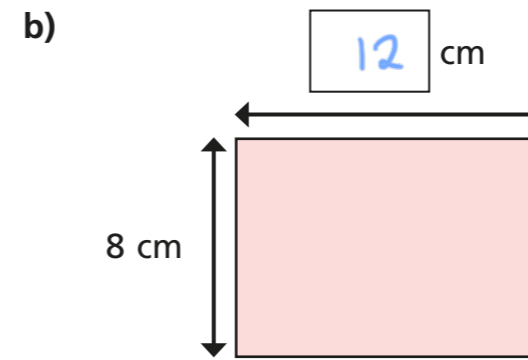**2** Work out the areas and perimeters of the shapes.

a)
6 cm
4 cm

perimeter = **20** cm

area = **24** cm²

b)
6 cm
4 cm
2 cm
2 cm
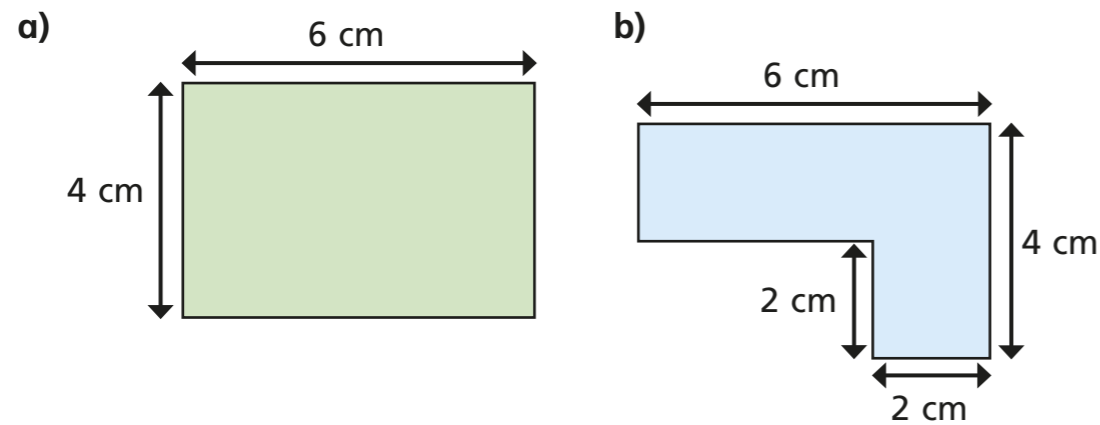
perimeter = **20** cm

area = **16** cm²

3 Work out the missing values.

a)
8 cm
4 cm

area = 32 cm²

perimeter = **24** cm

b)
12 cm
8 cm

area = **96** cm²

perimeter = 40 cm

c)
9 m
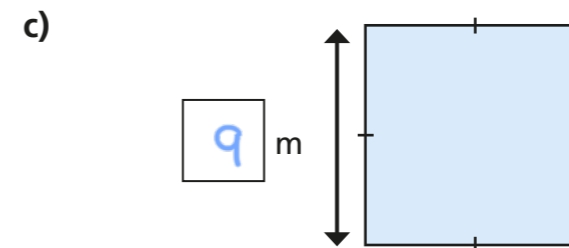
area = **81** m²

perimeter = 36 m

4 Work out the areas and perimeters of the shapes.

Shape A

area = **30** cm²
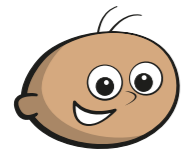
perimeter = **22** cm

Shape B

area = **29** cm²
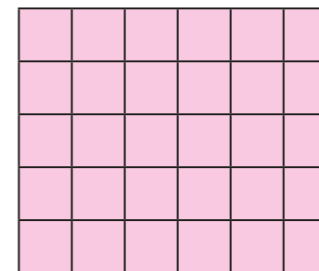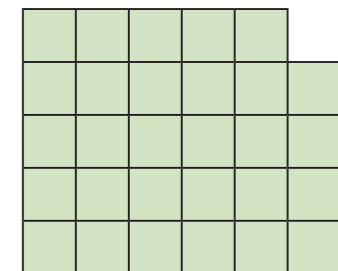
perimeter = **22** cm

What do you notice?

5

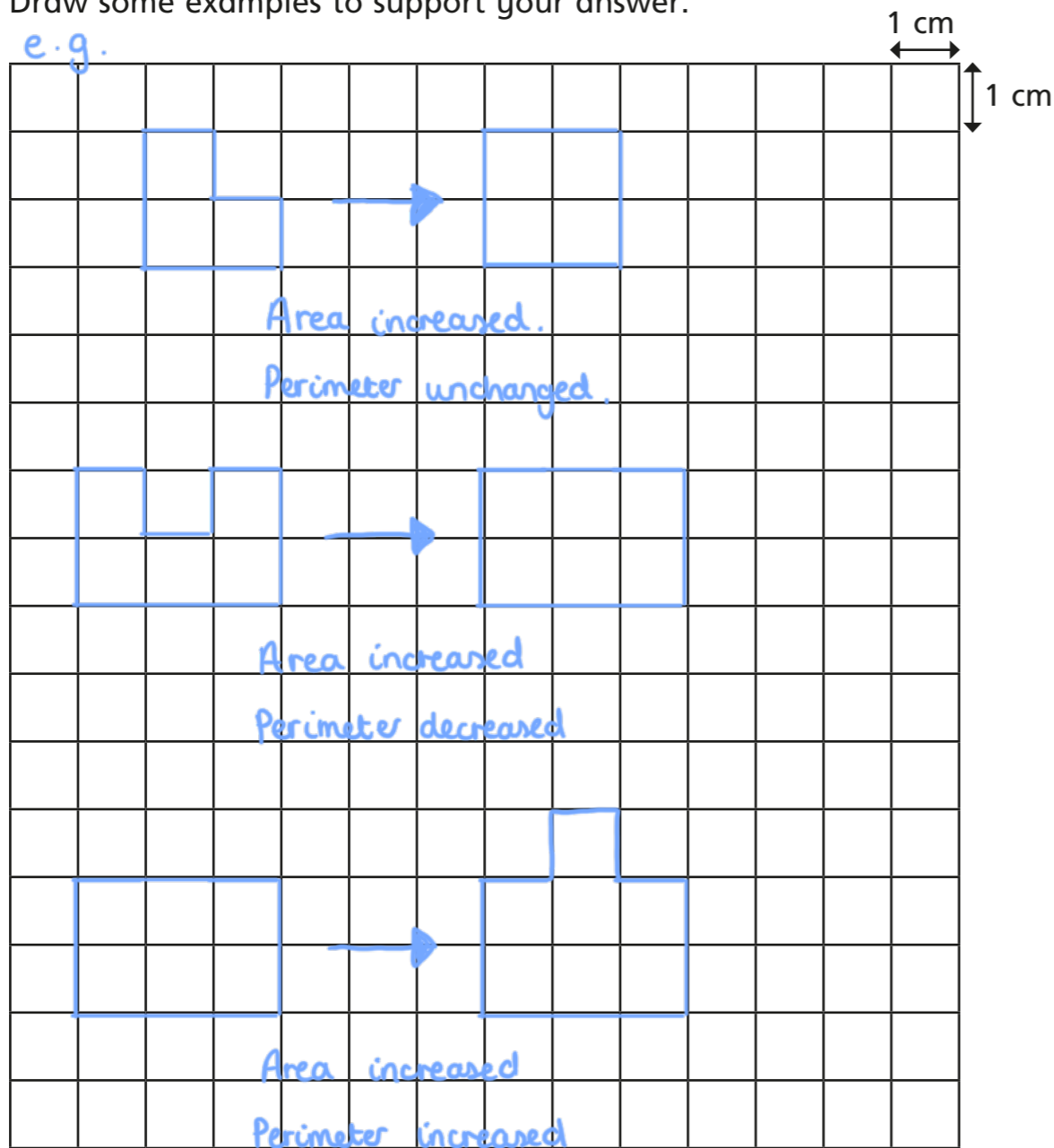Tommy: If you start with a rectilinear shape, when you increase the area, the perimeter will increase.

Amir: It depends on the shape.

Who do you agree with? ___Amir___

Draw some examples to support your answer.

e.g.

1 cm

1 cm

Area increased.
Perimeter unchanged.

Area increased
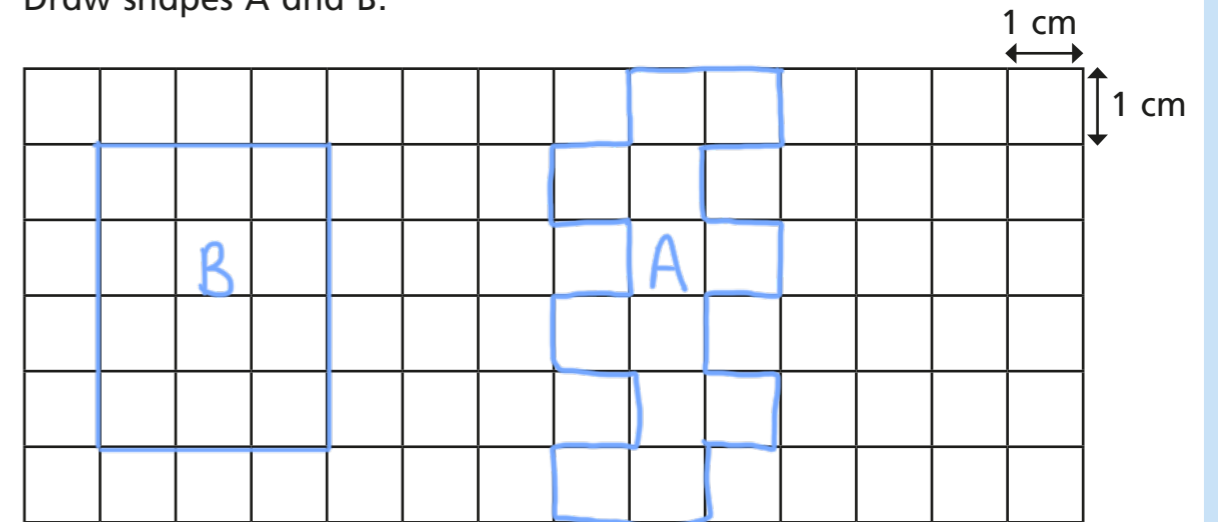Perimeter decreased

Area increased
Perimeter increased

6 Two rectilinear shapes, A and B, each have an area of 12 squares.

- Shape A has the largest perimeter possible.
- Shape B has the smallest perimeter possible.
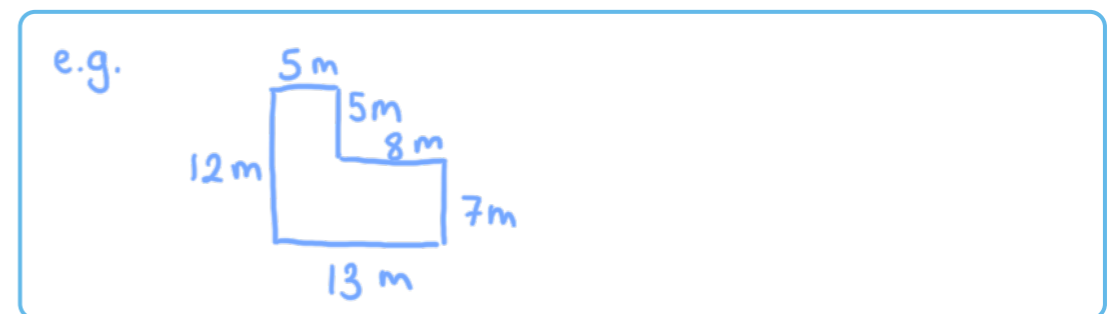
Draw shapes A and B.

1 cm

1 cm

B   A

What do you notice?

7 Mr Jones has 50 m of fencing.

He wants to make a rectilinear enclosure using all the fencing.

a) Draw an example of a shape he could make. Give units on your diagram.

e.g.

5 m
5 m
8 m
12 m
7 m
13 m

b) What is the greatest possible area of the enclosure? 156 m^2

c) What is the smallest possible area of the enclosure? 24 m^2