testbase

Name: _____

Area and Perimeter

Class: _____

Date: _____

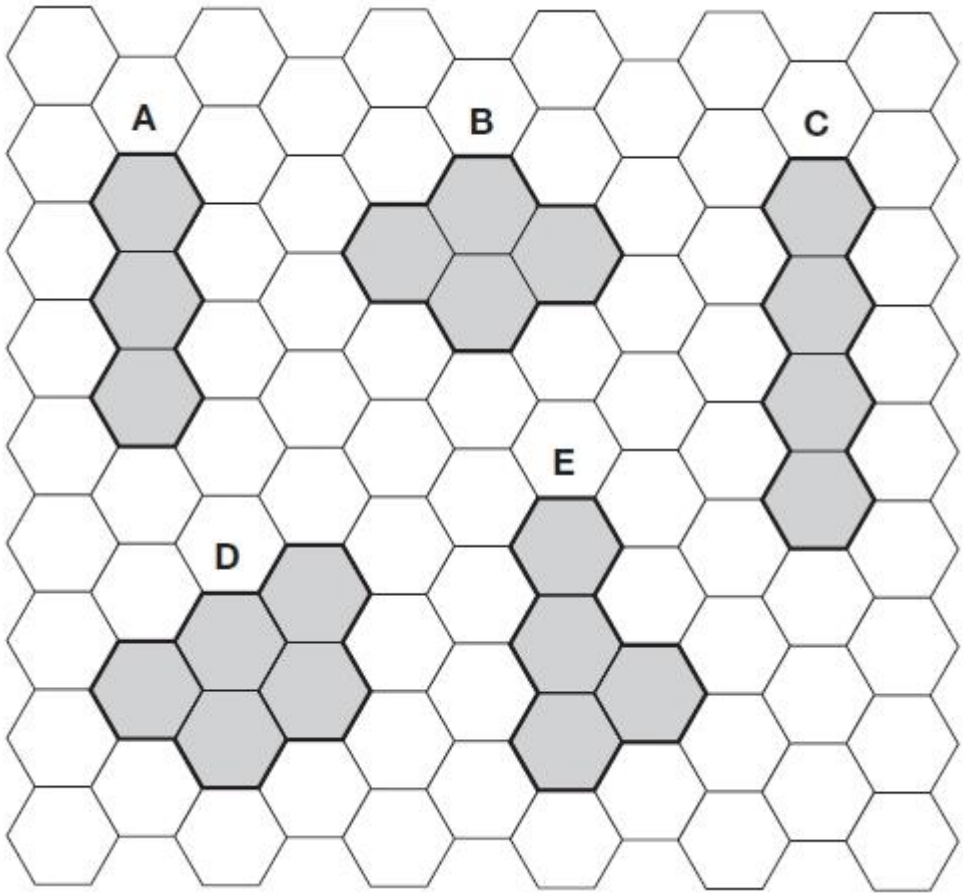
Time:

Marks: **16 marks**

Comments:

Q1.

Here are five shapes on a regular grid.



Which shape has the longest **perimeter**?

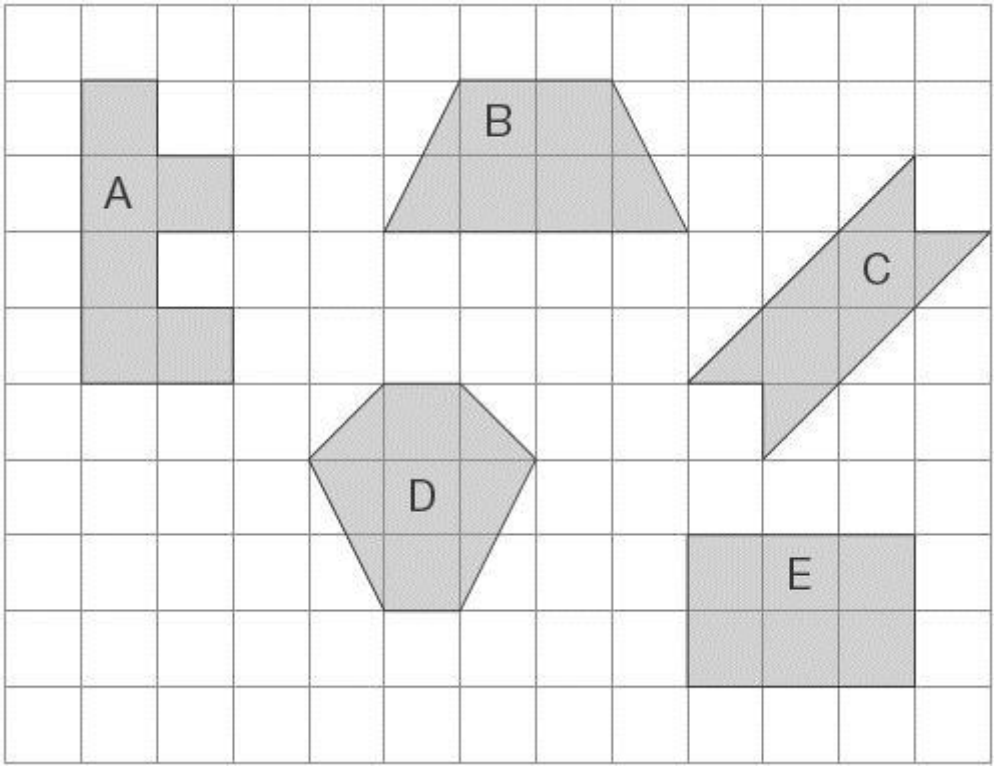
1 mark

Which shape has only one **line of symmetry**?

1 mark

Q2.

Here are some shapes on a 1cm square grid.



What is the **perimeter** of shape A?

cm

1 mark

Write the letter of the shape that has the **smallest area**.

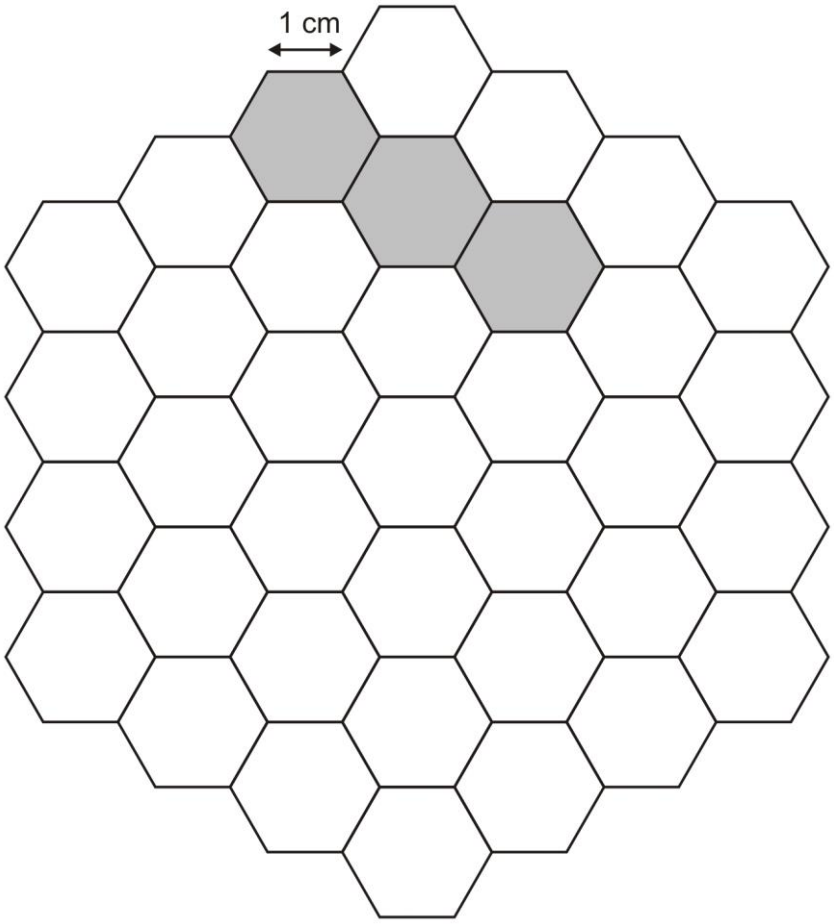
1 mark

Q3.

Here is a grid of regular hexagons.

The shaded shape has an area of 3 hexagons and a perimeter of 14 cm.

Draw another shape on the grid which has an **area** of 4 hexagons and a **perimeter** of 14 cm.



1 mark

Q4.

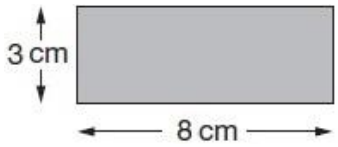
Megan says,

'If two rectangles have the same perimeter, they must have the same area.'

Is she correct?
Circle **Yes** or **No**. Explain how you know. 1mark

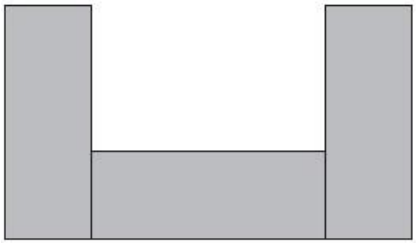
Q5.

Alfie has some rectangles.



Not actual size

He makes this shape using three of the rectangles.



What is the **perimeter** of Alfie's shape?

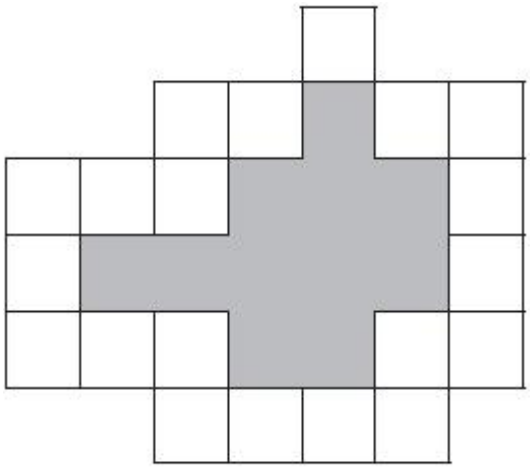
Show your method

cm

2 marks

Q6.

Here is a set of 20 squares around a shaded space.



What is the area of the shaded space?

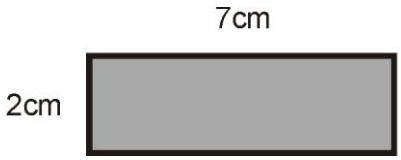
squares

1 mark

Q7.

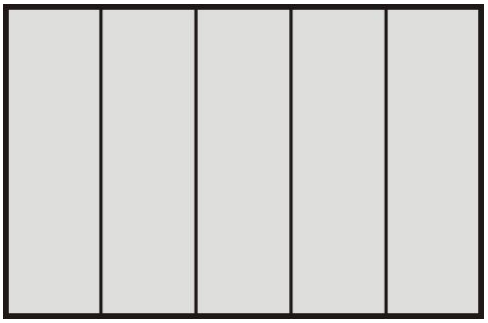
Lara has some identical rectangles.

They are 7 centimetres long and 2 centimetres wide.



Not actual size

She uses **five** of her rectangles to make the large rectangle below.



What is the **perimeter** of the large rectangle?

cm

1 mark

What is the **area** of the large rectangle?

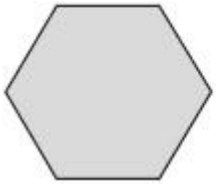
cm

1 mark

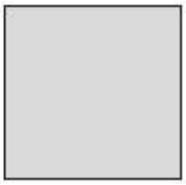
Q8.

These two shapes have the **same** perimeter.

regular hexagon



square



Not actual size

The length of each side of the **hexagon** is **8** centimetres.

Calculate the **area** of the **square**.

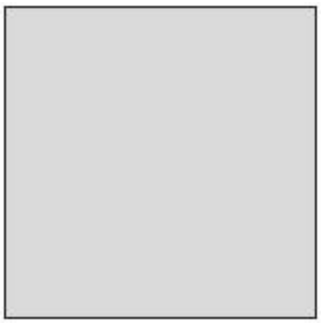
Show your method

cm²

2 marks

Q9.

The **area** of this square is 36 cm^2.



Not actual size

The square is cut into quarters to create 4 identical rectangles.

What is the **perimeter** of **one** of the small rectangles?

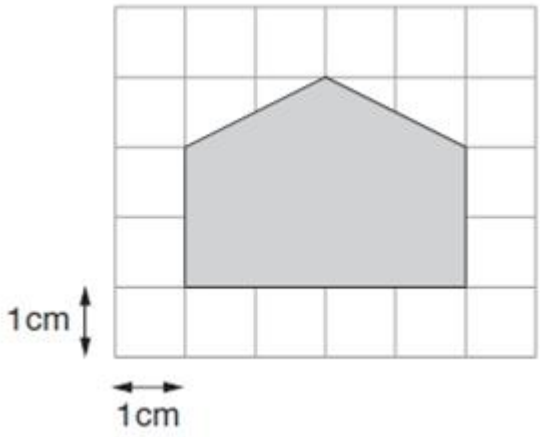
Show your method

cm

2 marks

Q10.

Here is a shaded shape on a 1 cm square grid.



What is the **area** of the shaded shape?

cm²

1 mark

Q1.

(a) C

Accept 18

1

(b) D

1

[2]

Q2.

(a) 14

1

(b) C

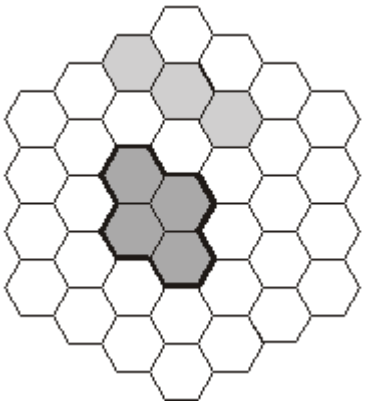
Accept 5

1

[2]

Q3.

Shape drawn on grid as shown:



Accept: shape in any position or orientation.

Accept: slight inaccuracies in drawing provided the intention is clear.

Accept: alternative unambiguous indications of the correct shape provided the intention is clear.

Accept: mathematically correct answers involving fractions of a hexagon.

Shape need not be shaded.

[1]

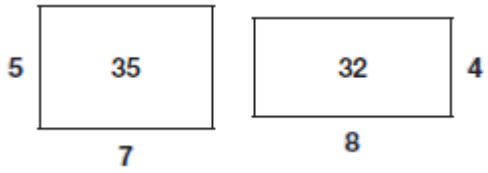
Q4.

Indicates No and gives a correct explanation that includes indicating two different areas, eg:

- A rectangle with sides 6 cm by 2 cm has a perimeter of 16 cm and an area of 12 cm^2 but a rectangle with sides 5 cm and 3 cm has the same perimeter of 16 cm but it has an area of 15 cm^2 which is different so she is not correct

- A square with sides 3 cm by 3 cm and a rectangle with sides 4 cm by 2 cm have the same perimeter of 12 cm but they have different areas of 9 cm^2 and 8 cm^2

Accept minimally acceptable explanation, eg:

- *6 × 2 = 12, 5 × 3 = 15*
- 

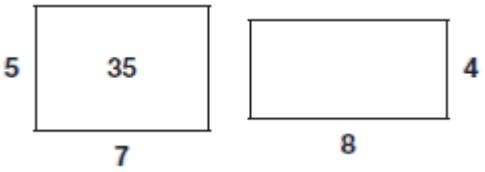
! Ignore any incorrect units given in an otherwise correct explanation, eg:

- *6^2 for 6 cm^2*

! Indicates Yes, or no decision made, but explanation clearly correct

Condone, provided the explanation is more than minimal

***Do not accept** Incomplete or incorrect explanation, eg:*

- *6 × 2, 5 × 3*
- *Two rectangles, one with sides 6 cm by 5 cm and one with sides 8 cm by 3 cm have the same perimeter of 22 cm but they don't have the same area*
- 

[1]

Q5.

Award **TWO** marks for the correct answer of 54

If the answer is incorrect, award **ONE** mark for evidence of appropriate working, eg

8 × 4 = 32

3 × 4 = 12

5 × 2 = 10

32 + 12 + 10 = wrong answer

*Working must be carried through to reach an answer for the award of **ONE** mark.*

Up to 2

[2]

Q6.

11

Accept 11 cm²

[1]

Q7.

(a) 34

1

(b) 70

1

[2]

Q8.

Award **TWO** marks for the correct answer of 144

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g.

- 8 × 6 = 48
  48 ÷ 4 = 13 (error)
  13 × 13 = 169

OR

Award **ONE** mark for:

- evidence for the side length of the square calculated correctly, i.e. 12
  *Answer need not be obtained for the award of **ONE** mark.*

Up to 2m

[2]

Q9.

15

2

or

6(cm) and 1.5(cm) seen (*the dimensions of the rectangle*)

OR

Shows or implies a complete correct method, eg:

- $\sqrt{36}$ = 8 (*error*)
  8 ÷ 4 = 2
  2 × (8 + 2)

- 6 × 6 = 36
  6 ÷ 4 = 1.2 (*error*)
  6 + 1.2 + 6 + 1.2

***Do not accept** confusion between area and perimeter, ie:*

- *side of square is 36 ÷ 4 = 9 (error)*
  2 × (9 + 2.25)

1

[2]

Q10.

10

[1]