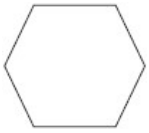
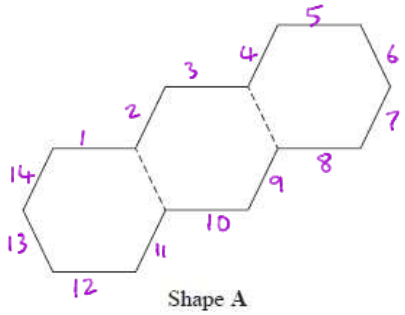
GCSE QUESTIONS WITH CLUES

Q1. CALCULATOR ALLOWED

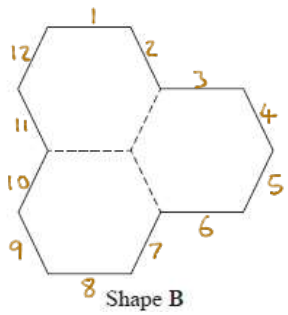
Here is a regular hexagon.



There are six identical hexagons.
Three of the hexagons are joined to make shape **A**.
The other three hexagons are joined to make shape **B**.



Shape A



Shape B

Which shape has the greater perimeter, shape **A** or shape **B**?
You must show how you get your answer.

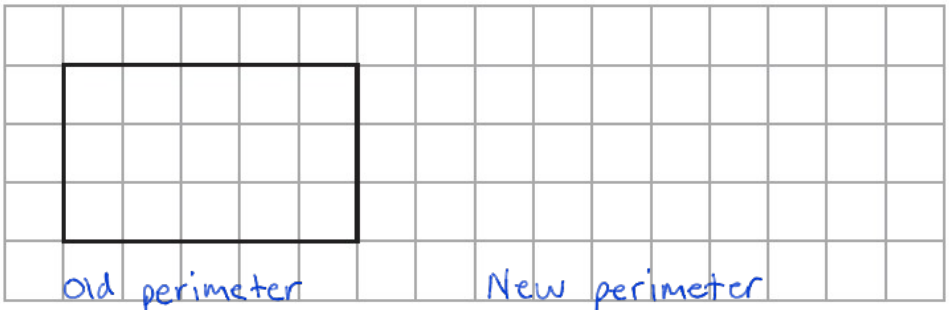
distance around edge

(Total for question = 2 marks)

Q2. CALCULATOR ALLOWED

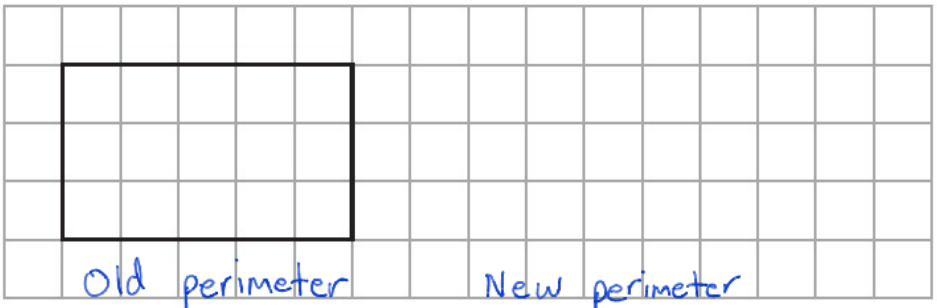
Give an example to show that when a piece is cut off a rectangle the perimeter of the new shape

(i) is less than the perimeter of the rectangle,



(ii) is the same as the perimeter of the rectangle,

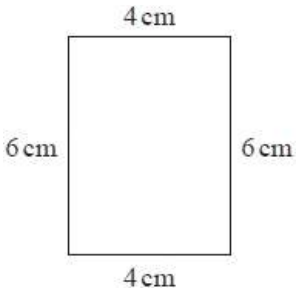
(iii) is greater than the perimeter of the rectangle.



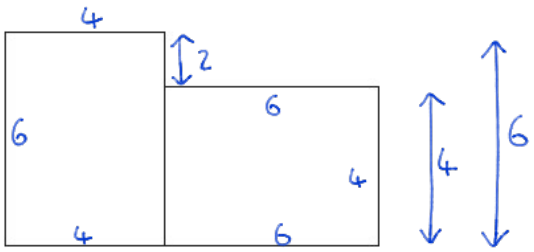
(Total for question is 3 marks)

Q3. CALCULATOR ALLOWED

Here is a rectangle.



The 6-sided shape below is made from two of these rectangles.



Work out the perimeter of this 6-sided shape.

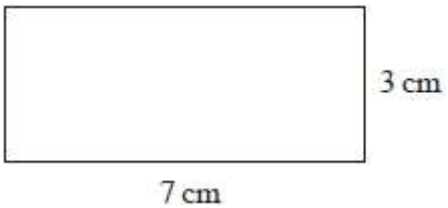
distance around edge

..... cm

(Total for question = 3 marks)

Q4. CALCULATOR ALLOWED

Here is a rectangle.



Coby has to find the perimeter of this rectangle.

He writes,

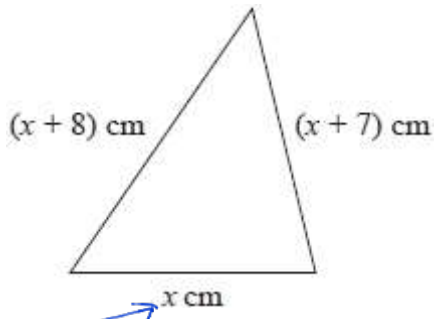
Perimeter = 7 × 3

(a) What mistake has Coby made?

Perimeter is the distance around the edge.
Coby should have done:

(1)

Here is a triangle.



Iram solves a problem about this triangle to find the value of x.

Her answer is

$x = -2$

(b) Explain why Iram's answer must be wrong.

(1)

(Total for question = 2 marks)

Q5. CALCULATOR ALLOWED

The diagram shows a scale drawing of a tennis court.

The scale of the drawing is 1 : 200

Work out the perimeter of the real tennis court.
Give your answer in metres.

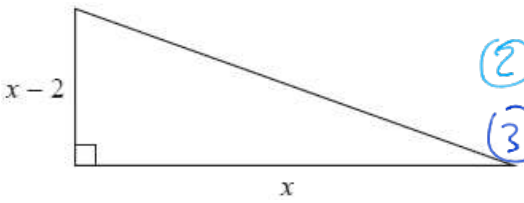
(Depends on printing)

..... metres

(Total for question = 5 marks)

Q6. CALCULATOR ALLOWED

Here is a right-angled triangle.



① Form equation using area of triangle and solve to find x
② Using Pythagoras to find hypotenuse
③ Add all lengths to find perimeter

All measurements are in centimetres.
The area of the triangle is 2.5 cm^2.

Find the perimeter of the triangle.
Give your answer correct to 3 significant figures.
You must show all of your working.

$\text{Area} = \frac{1}{2}bh$

$2.5 = \frac{1}{2}x(x-2)$

$2.5 = \frac{1}{2}x^2 - x$

$0 = \frac{1}{2}x^2 - x - 2.5$

$0 = x^2 - 2x - 5$

$0 = ax^2 + bx + c$

$a=1 \quad b=-2 \quad c=-5$

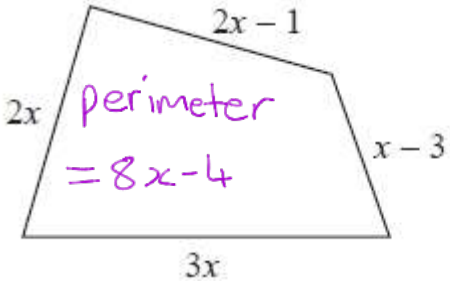
$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$

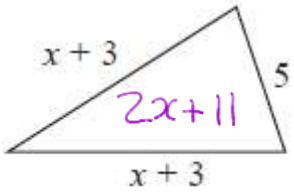
(3sf)

..... cm

(Total for question is 6 marks)

Q7. CALCULATOR ALLOWED





In the diagram all measurements are in centimetres.

The perimeter of the quadrilateral is twice the perimeter of the triangle.

Work out the perimeter of the quadrilateral.

perimeter of quadrilateral = 2 × perimeter of triangle

=

↓ solve to find x

↓ substitute into 8x − 4

..... cm

(Total for question = 4 marks)

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