Junior Lyceum Entrance Examination into Form One

2006

MATHEMATICS

ANSWER ALL QUESTIONS

(Questions 1 to 10 … 4 marks each; questions 11 to 20 … 6 marks each)

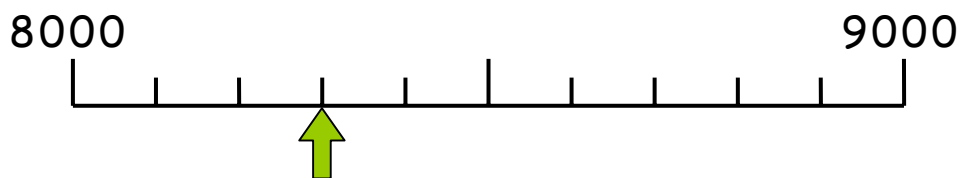1. a) Work out: $\begin{array}{r} 8319 \\ -3275 \\ \hline \\ \hline \end{array}$

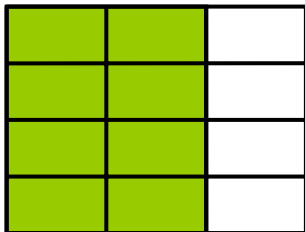   b) The **value** of 3 in 8319 is:

   _____

   c) Write in **words**: 8319

   _____

   _____

   d) **What number** does the arrow **point to?**

   8000   9000

   _____

2. a) What **fraction** of the shape is **shaded**?

   _____

   b) i)

   $\dfrac{2}{3}$ $\dfrac{7}{12}$

   The **smaller** fraction is: _____

   ii) Work out: $1\frac{2}{3} - \frac{7}{12}$

   _____

3. a) Write in order of size, **largest** first.

$$4{\cdot}07 \qquad 0{\cdot}47 \qquad 4{\cdot}7 \qquad 0{\cdot}74$$

_____ \qquad _____ \qquad _____ \qquad _____

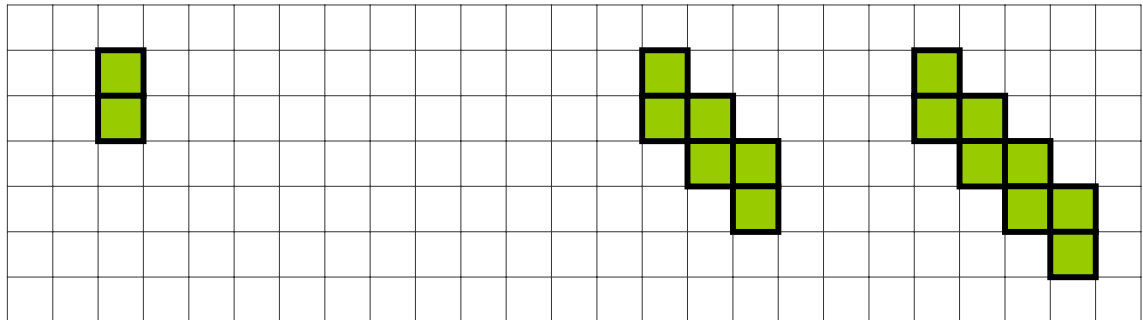b) i) Look at these patterns.
   Draw pattern 2.

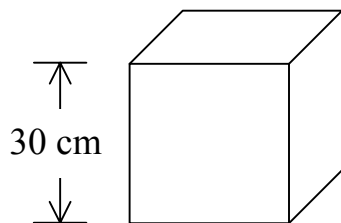| pattern 1 | pattern 2 | pattern 3 | pattern 4 |

ii) How many squares do you need to draw **pattern 13**?

_____ **squares**

4. a) The diagram shows a **cube** of side 30 cm.
   Work out its **volume**.

30 cm

_____ **cm^3**

b) Fill in with **two odd** numbers:

$$\boxed{} + \boxed{} = 14$$

c) Fill in correctly:

$$250 \div 50 = \boxed{}$$

5. Fill in with $+$, $-$, $\times$ or $\div$ to make the statements true.

a) Lm1 ☐ 4 = 25c

b) 630 g ☐ 570 g = 1·2 kg

c) 90° ☐ 4 = 360°

d) Lm1.50 ☐ 75c = 75c

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6. Patrick draws 2 rectangles **A** and **B**.
Both rectangles have the **same perimeter**.
His sister Debbie spills some ink on rectangle **B**.

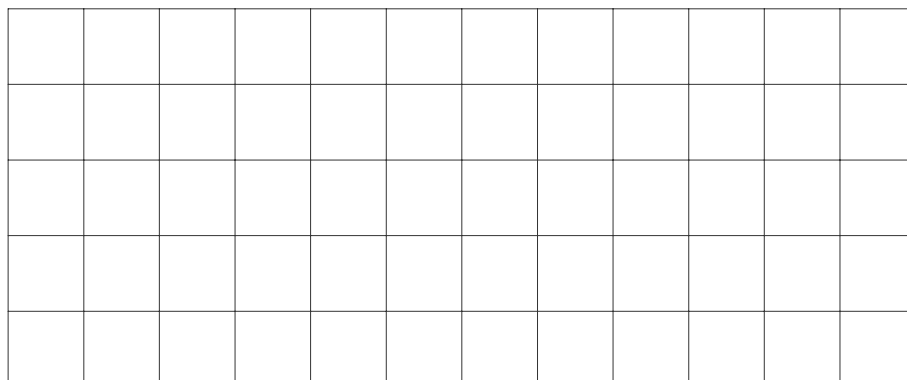8 cm

3 cm | **A**

2 cm | **B**
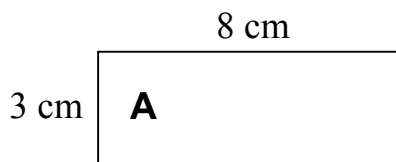
a) Work out:
i) the **perimeter** of rectangle **A**.

_____ **cm**
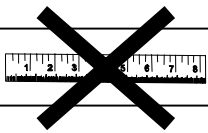
ii) the **length** of rectangle **B**.

_____ **cm**

b) Draw on the grid a **different** rectangle with the **same perimeter** as rectangle **A**.
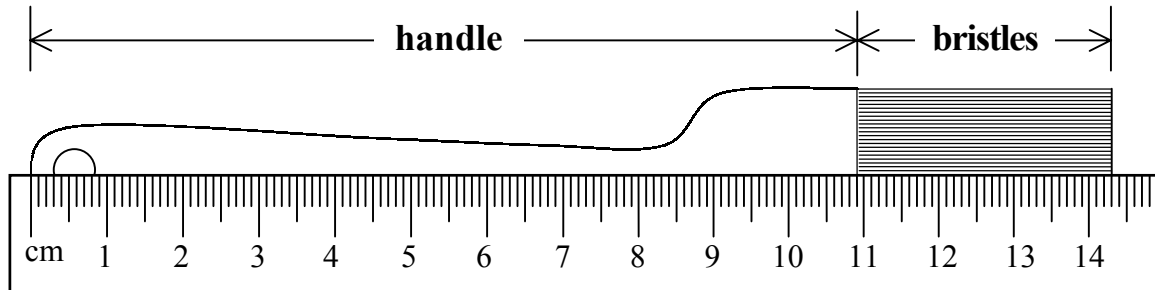(**Each square** on the grid is of side 1 cm.)

7.

Look at the picture of this paintbrush.

|← ———————————— handle ———————————— →|←— bristles —→|

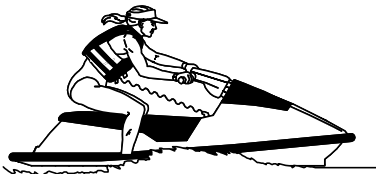cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14

a) Complete:

i) The **total length** of the paintbrush is _____ **cm**.

ii) The length of the **handle** is _____ **cm**.

b) Work out the length of the **bristles** in **millimetres**.

_____ **mm**

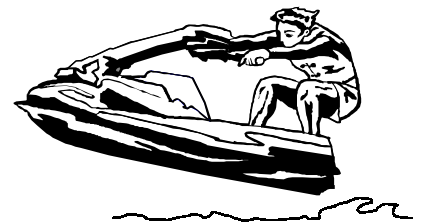8. a)

Mariella's jet ski travels 180 km in 4 hours.
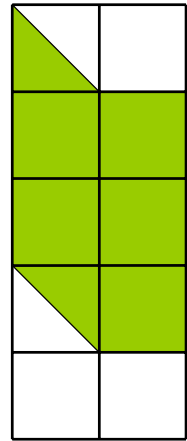Find the speed of the jet ski in **km/h**.

_____ **km/h**.

b) Harry's jet ski travels 2·5 km/h **faster** than Mariella's.
Work out the **distance** Harry travels in 6 hours.

_____ **km**

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9. a) Look at the drawing.
        The **shaded part** is _____ **%** of the whole shape.

    b) Martin and Daphne share Lm15 between them.
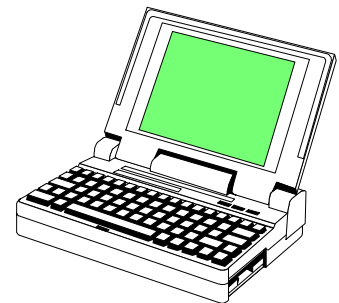   **Martin** receives **60%** of the money.

        i) What **percentage** of the money does Daphne receive?

                                                            _____ **%**

        ii) Work out the **amount** of money Daphne receives.

                                                            Lm _____

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10. Petra buys a laptop costing Lm500.
     She pays a monthly sum of money.
     Each month she pays Lm27 **except for the last month**.
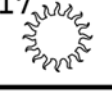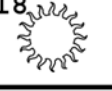
     i) Work out the **total** number of **months** Petra takes to
         pay for the laptop.
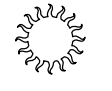
                                                            _____ **months**

     ii) Petra's **last payment** is **Lm** _____.

11. This is the weather chart for April 2006.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

a) **Fill in** the table correctly:

	Rainy	Cloudy	Partly Cloudy	Sunny
Number of days		9		

b) Use the table to complete the **graph**.

Number of days

12
10
8
6
4
2

Rainy   Cloudy   Partly Cloudy   Sunny
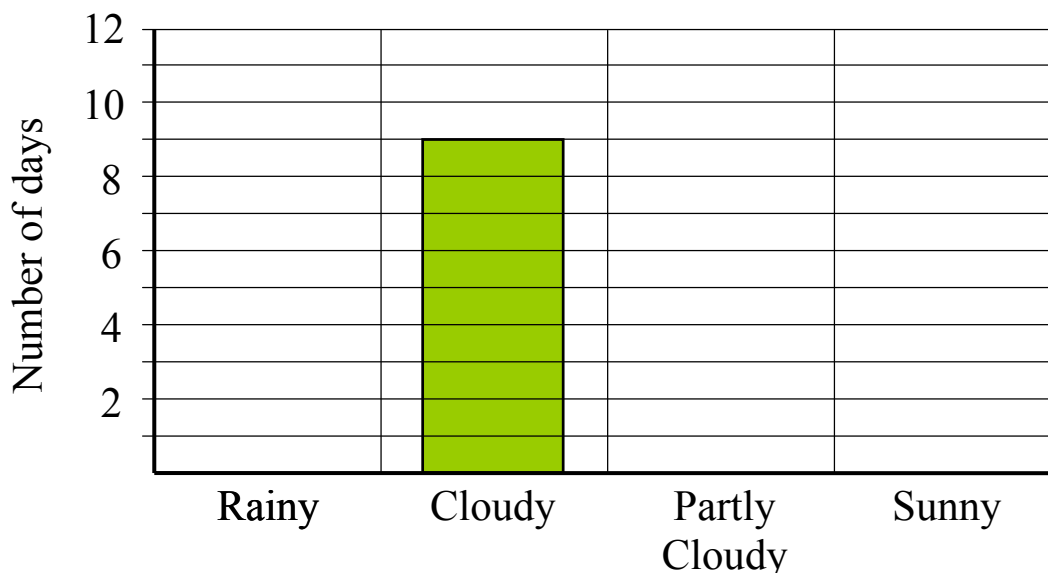
c) What fraction of the whole month was cloudy?
(Give your answer as a fraction in its **lowest terms**.)

12. Look at angle P.
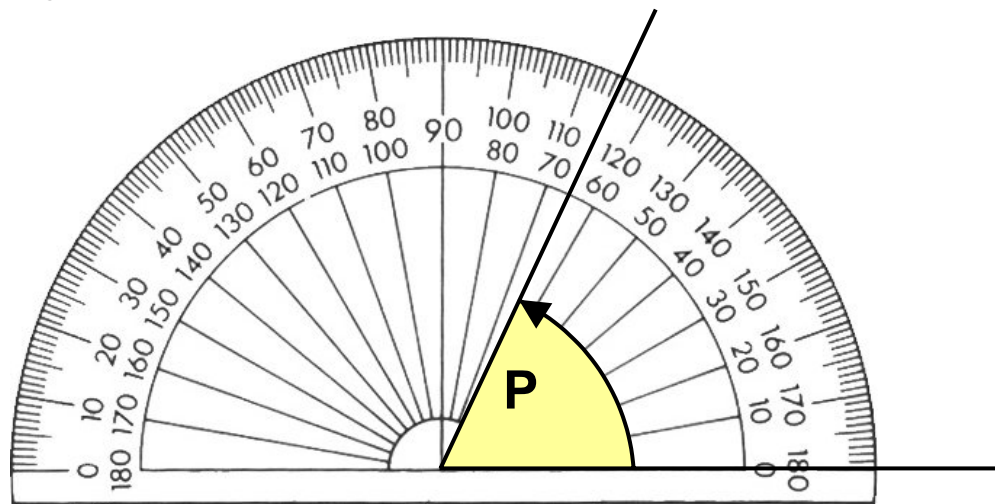
a)   The size of angle P is _____ °

b)   Look at these angles.
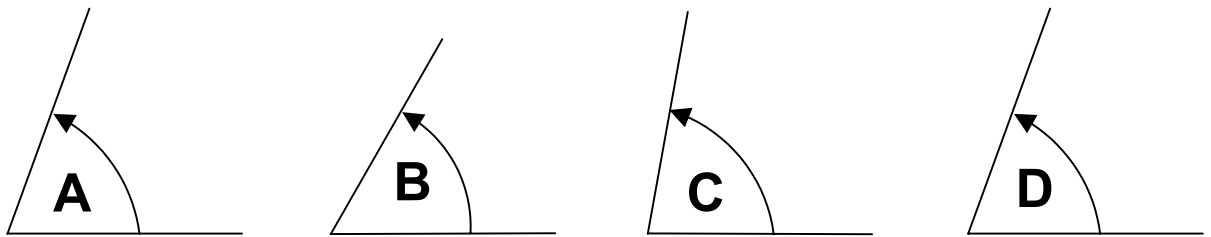
i) **Use your protractor** to fill in the following.

- The **smallest** angle is angle _____.

- Angle _____ and angle _____ are **equal**.

ii) Underline the correct word in the brackets.

- Angles **A**, **B**, **C** and **D** are **all** (**right, acute, obtuse**) angles.

c)   Look at triangle FGH.

i)   The sum of angles F, G and H is _____ °

ii) Underline the correct word in the brackets:

- Triangle FGH is (**scalene, equilateral, isosceles**).
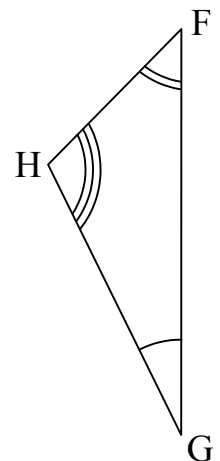
13. Look at this map.

Each side of a square on the map stands for a length of 1·5 km.

Captain Gold is at the **Bay**.
Fill in with the correct **compass directions**:

a) i) Captain Gold walks **directly**

_____ to go
to the **cave**.

ii) Captain Gold is now at the Cave.
He then goes to find the Treasure.

He walks 1.5 km _____ and then 7·5 km _____ .

b) Captain Gold is now at the Treasure.
He wants to get back to the Bay.

He can walk **4·5 km South** and then **4·5 km East**.

Use **distance** and **compass directions** to describe **another** way Captain Gold can take to get back to the Bay.

_____ .
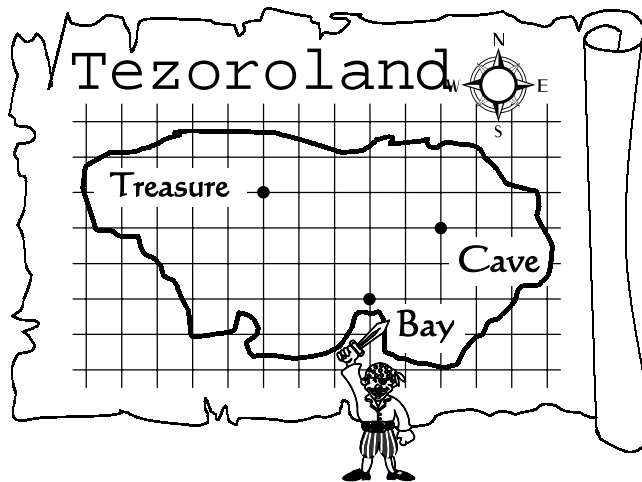
14. Silvio needs **8·75 litres** to paint **7 doors**.
   a) Work out the number of litres of paint he needs to paint **1 door**.

_____ ℓ

   b) Paint costs Lm8 per litre.
   Silvio buys Lm60 worth of paint.

   i) How many **litres** of paint did Silvio buy?

_____ ℓ

   ii) How many doors did Silvio manage to finish with the paint he bought?

_____ **doors**

   iii) How many **more** litres of paint does Silvio need to paint the **7 doors**?

_____ ℓ

15. The headteacher organised a school outing.
   The numbers in the circles below show how many children are on each bus.

36	**31**	**24**	**33**
bus 1	bus 2	bus 3	bus 4
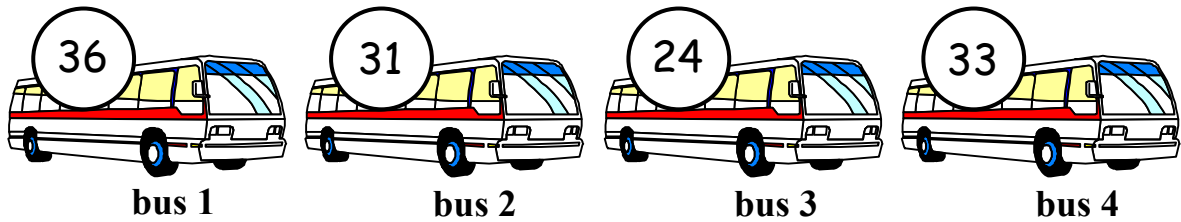
a) Work out the **average** number

   of children on each bus.

b) $\frac{2}{3}$ of the children in **bus 1** are boys.

   $\frac{3}{4}$ of the children in **bus 3** are boys.

   In which of these two buses are there **more** boys?

_____ **children**

bus _____

16. a) The diagram shows how Mary
      spent last Sunday afternoon.
      At what time did Mary **arrive home**?

   Start
   2:15 p.m.

   ⬇

   2½ hour film

   ⬇

   30 minute walk

   ⬇

   home

   _____
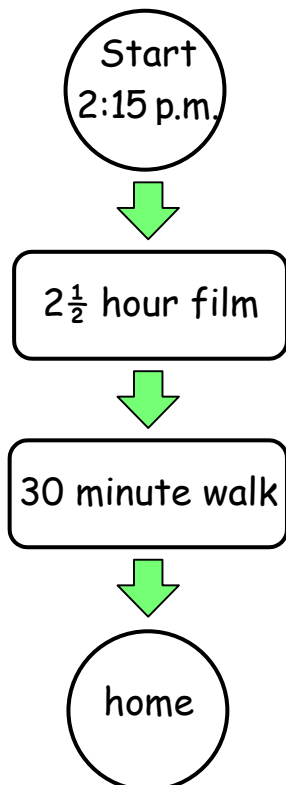
b) The diagram shows one of Peter's
   schooldays.
   At what time does Peter **wake up**?

   Wakes up

   ⬇

   50 minutes preparing for school

   ⬇

   5½ hours at school

   ⬇

   End
   14:10

   _____
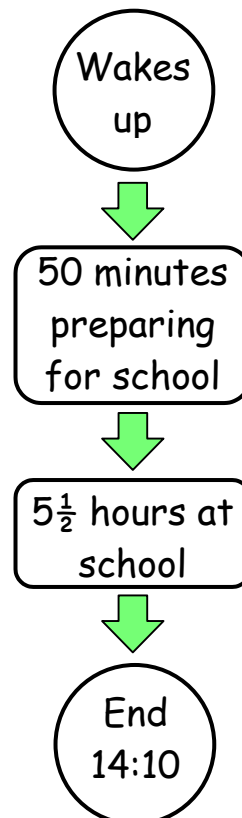
17. Look at this shape.
   All the sides are **equal**.
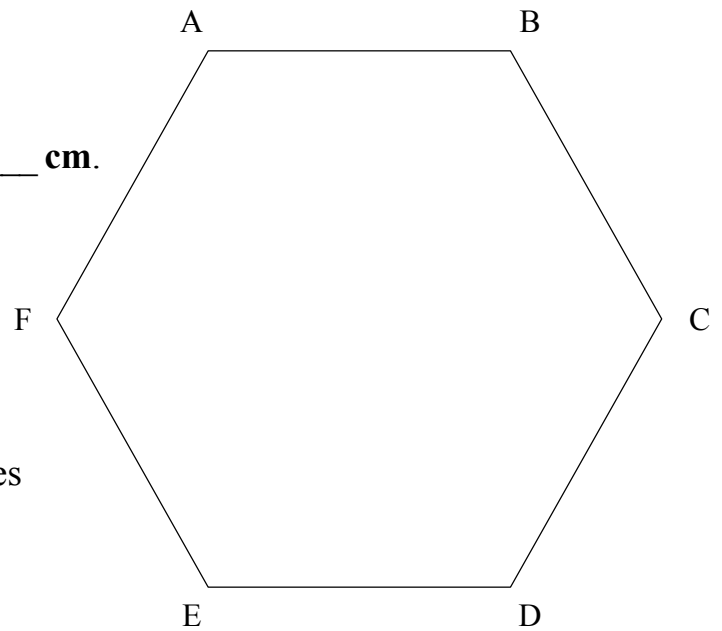
   a) The side AB measures _____ **cm**.

   b) Use your **ruler** to:
      i) draw the **horizontal** line of symmetry of this shape.
      ii) Join AD.

   c) i) Draw a circle **outside** the shape to pass through the vertices A, B, C, D, E and F.

      ii) Use your ruler to measure the **radius** of the circle.

   _____ **cm**

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18. A waiter is carrying a tray.

   On the tray he has **3 bottles of lemonade** and **2 cups of coffee**.

   The **total weight** he is carrying is 3·7 kg.

   The **tray** weighs 450 g.

   Each **cup of coffee** weighs 0·5 kg.

   Work out the weight of **1 bottle of lemonade** in grams.
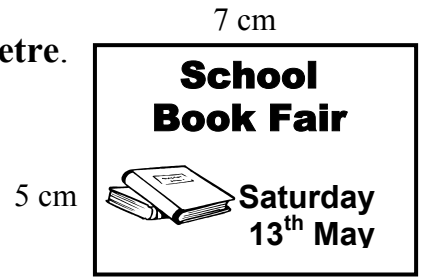
   _____ **g**

19. Mandy wants to put **either** advert A **or** advert B in the newspaper.
The adverts have a **rectangular border**.
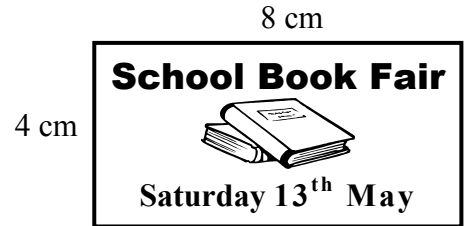Both borders have the **same perimeter**.
The **charge** for an advert is **25c for every square centimetre**.

7 cm

School Book Fair

5 cm

Saturday 13ᵗʰ May

advert A

a) i) the cost of **advert A** is Lm _____.

ii) the cost of **advert B** is Lm _____.

8 cm

School Book Fair

4 cm

Saturday 13ᵗʰ May

advert B

iii) The **cheaper** advert is _____.

b) Paul wants to put another **rectangular** advert with the **same perimeter** in the same newspaper.

He wants to pay **less** than Mandy for his advert.

Work out the **length** and **width** of Paul's advert.
(The **width** of each advert must be **more than 2 cm**.)

length _____ width _____

20. This is the menu at Fiona's Restaurant. Part of the menu is missing.

a) What is the bill for **egg, chips and tomatoes**?

Fiona's Restaurant

Egg and bacon……………………………… Lm1.00
Egg and chips ……………………………… 85c
Egg and tomatoes ………………………… 50c
Egg, bacon and tomatoes……………… Lm1.10
Egg, chips and tomatoes………………
Egg, bacon, tomatoes and chips …

_____cents

b) What is the bill for **egg, bacon, tomatoes and chips**?

Lm _____

END OF PAPER