Junior Lyceum Entrance Examination into Form One

2005

MATHEMATICS

ANSWER ALL QUESTIONS

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

1. a) Work out:

$$350$$
$$-249$$
_____

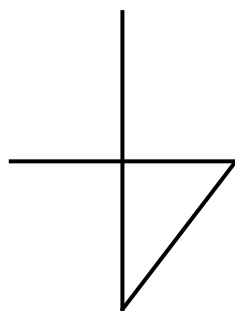b) Write down in **figures** the **sum** of :

three thousand
two hundred
twenty
six

_____

_____

c) The bar chart shows the number of pets.
How many pets are there in **all**?
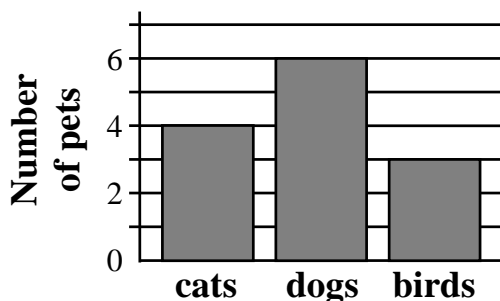
_____ **pets**

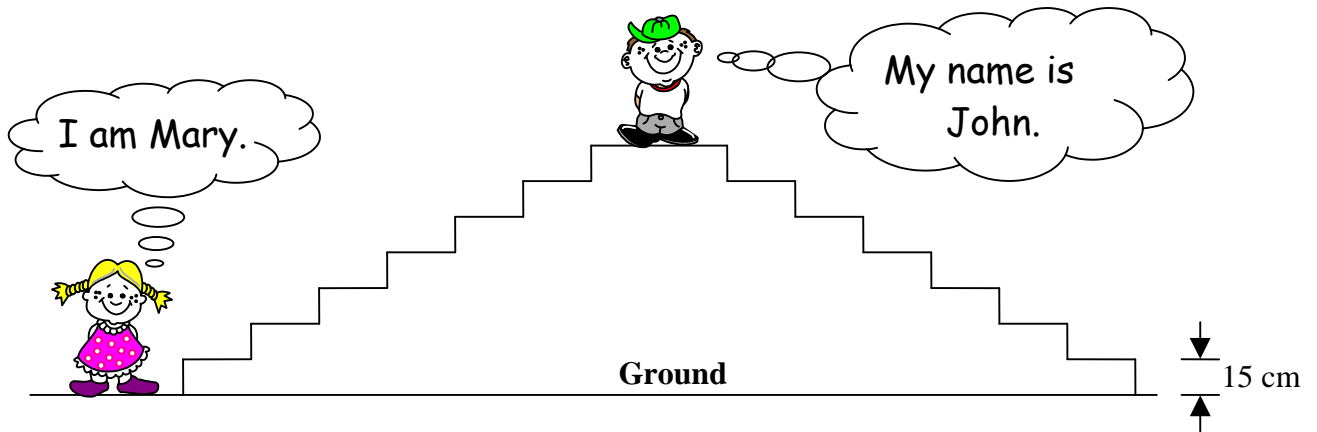2. a) **Use your ruler** to complete the shape so that it has **2 lines of symmetry**.

b) Work out:

i) $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

_____

ii) $2\frac{3}{4} - 1\frac{1}{2}$

_____

3. Each step in the picture is **15 cm high**.
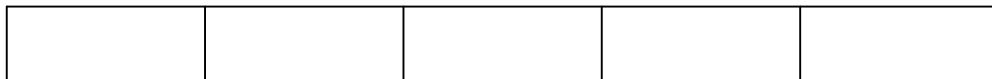

I am Mary.

My name is John.

Ground

15 cm

a) How high is John above the ground? _____ **cm**

b) Mary goes **up** 3 steps and John goes **down** 2 steps.

   i) Who is the higher above the ground? _____

   ii) Fill in:
   Mary must go **up** _____ **more** steps to be 75 cm above the ground.

4. a) Fill in correctly: $0{\cdot}8$ = $\dfrac{8}{\boxed{}}$ = $\dfrac{4}{\boxed{}}$

   b) Write 80% as a **decimal**:

   _____

   c) This strip is used to show a length of **10 m**.
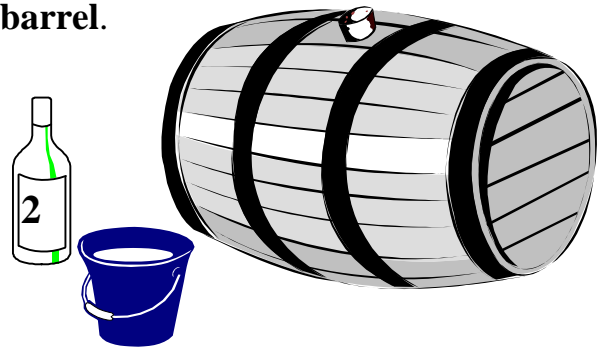

   i) Shade 80% of the strip.

   ii) How long is 80% of **10 metres**?

   _____ **m**

5. The picture shows a **2l bottle**, a **bucket** and a **barrel**.

   i) 2 bottles of water fill the bucket completely.
   20 buckets of water are needed to fill the
   barrel completely.
   How many litres of water does the barrel
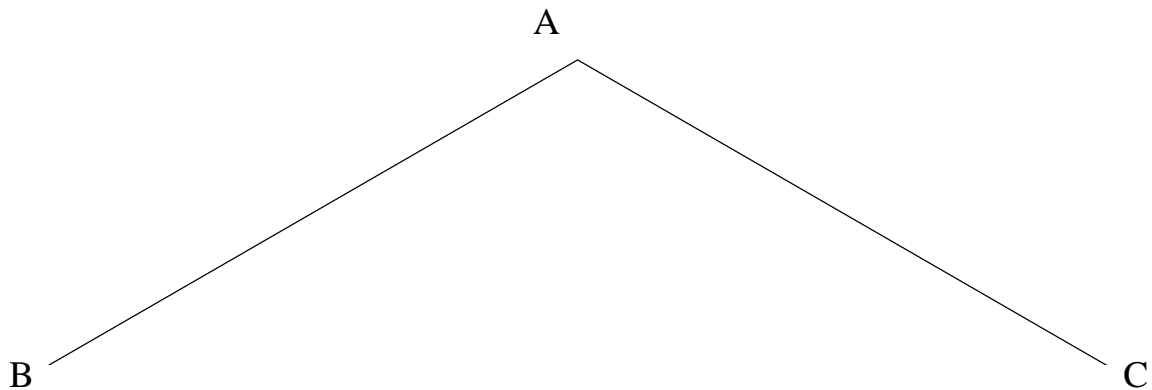   hold when completely full?

   _____ **litres**

   ii) A larger bucket is used to fill the barrel.
   It can hold **twice** as much water as the smaller bucket.
   How many buckets of water are needed to fill the barrel completely?

   _____ **buckets**

6. i) **Use your ruler** to complete **triangle ABC**.

   A

   B   C

   ii) Measure the **length** of side BC.   _____ **cm**

   iii) Measure and write down the **size of angle A**.   _____ **o**

   iv) Complete the statement:
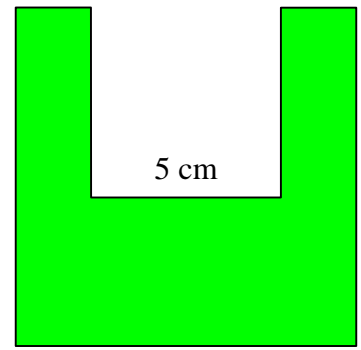
   An **isosceles** triangle has _____ equal sides and _____ equal angles.

7. A **square** of side 5 cm is cut from a larger **square** of side 9 cm.
   The remaining part is shaded.
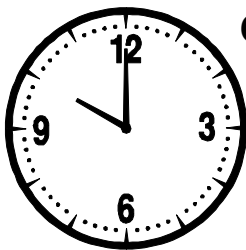
   Work out:
   i) the perimeter of the shaded part.

   5 cm

   _____ **cm**   9 cm

   ii) the area of the shaded part.

   _____ **cm**^{2}

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8. i) **Clock A** shows the time a bus leaves Valletta for Mellieħa on Monday morning.
      At what time does the bus leave Valletta?

   Clock A

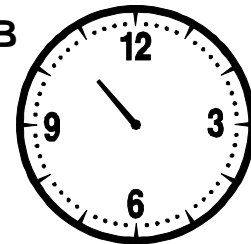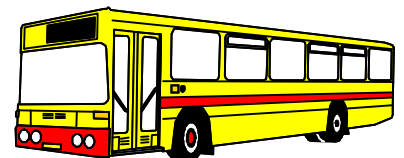   _____

   ii) The bus arrives at Mellieħa **45 minutes later**.
       Draw the **minute hand** on **clock B** to show the time the bus arrives at Mellieħa.

   Clock B

   iii) The bus **stops for half an hour** at Mellieħa and returns to Valletta.
        It **arrives** at Valletta **at 12:05**.
        How long does the journey from Mellieħa to Valletta take?

   _____ **minutes**

9. The diagram shows the net of a solid shape.

    a) **Underline** the correct word in the brackets:

        i) The **net** has (one, two, three, four)
            lines of symmetry.

        ii) This is the **net** of a
            (cube, cuboid, cone, pyramid).
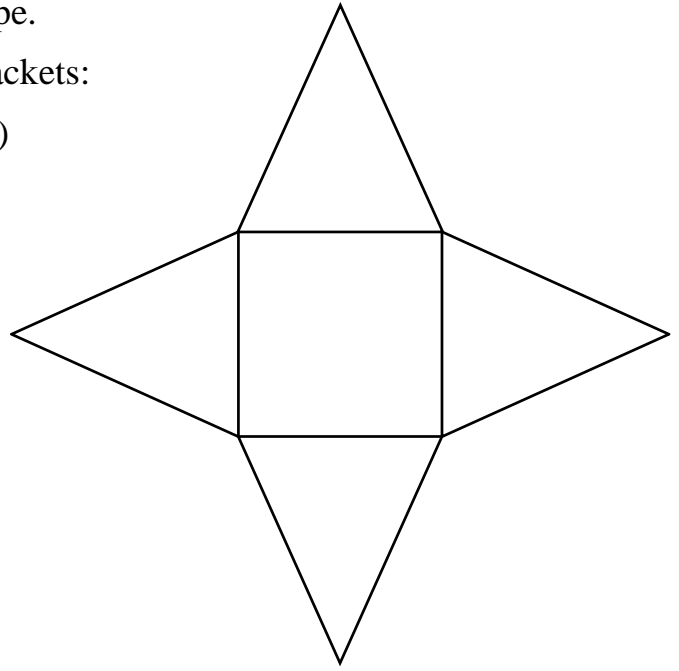
    b) Fill in correctly:

        The **solid** formed by this net has:

        _____ **edges** and _____ **vertices**.

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10. A bag contains 448 grams of coffee.
    One tin contains 37 grams of coffee.

    i) How many tins can be filled from
        the bag?

        _____ **tins**

    ii) How many **more** grams are needed to fill **another** tin?

        _____ **grams**

11. a) On my bike I cycle 36 km in 3 hours.
        i) Find my speed in km/h.

                                                    _____ **km/h**

        ii) I cycle for 1½ hours at the **same speed**.
            What distance do I cycle?
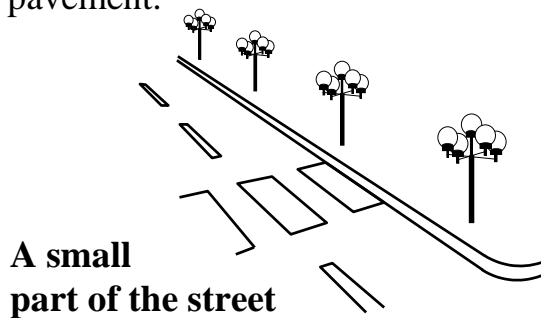
                                                    _____ **km**

    b) A street has 13 lamp posts fixed on the pavement.
        The distance between one lamp post and another is **20 metres**.
        Work out the **distance** between the **first** and the **last** lamp post on the
        pavement.

        **A small
        part of the street**   _____ **m**

12. The graph shows the cost of booking a holiday for a number of persons.

    a) What is the cost of booking a
        holiday for 1 person?

            Lm _____
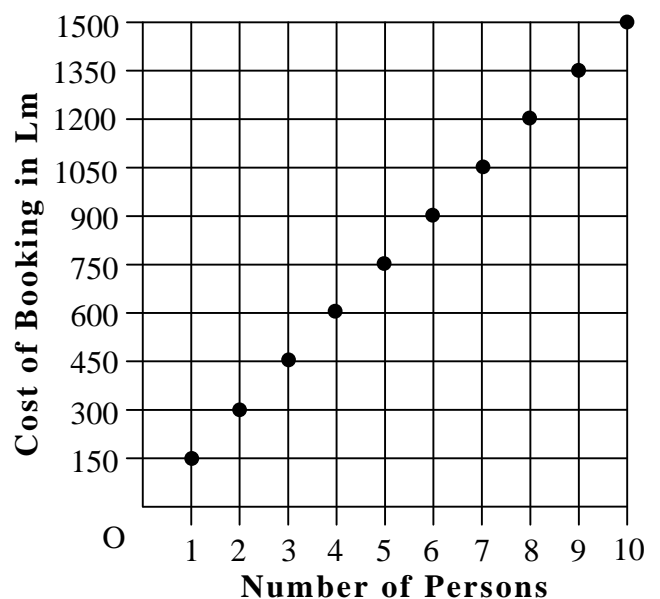
    b) How many persons can book
        for Lm900?

            _____ **persons**

    c) How much does it cost to book for
        15 persons?

            Lm _____

    d) For how many persons can I book if I have Lm517? _____ **persons**.

13. The table shows the heights of Keith, Grace and Susan.

Keith	Grace	Susan
148 cm	1 m 55 cm	1·5 m

a) Work out their **average** height in **cm**.

_____ **cm**

b) Alice has the same height as their average height.
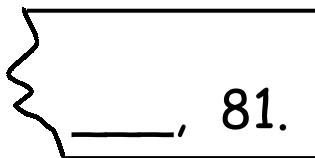Alice says she is the **tallest** of them all. Is this true?

_____

c) Fill in the table with the names and heights of each child, **shortest first**.
(The first one is done for you.)

Name	Keith			
Height	148 cm			

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14. Robert finds these three pieces of paper with a number pattern written on them.

_____, 81.

A

4, 9,

B

36, _____,
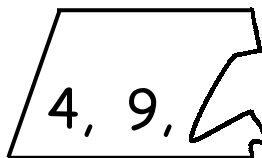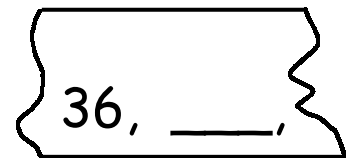
C

a) Look at these numbers. What are these numbers called? _____.

b) Robert tries to arrange these pieces of paper to get a sequence of numbers with the **smallest number first.**

Underline the correct order: ABC   CBA   BCA   BAC

c) Fill in the missing numbers **on papers A and C** above.

d) The **last number** of the sequence is **81**.
Robert finds the two missing pieces of paper.
Fill in the missing numbers.

_____,   _____, _____,

15. The diagram is drawn to scale. **1 cm represents 4 m**.

It shows the position of four children in a part of a schoolyard.
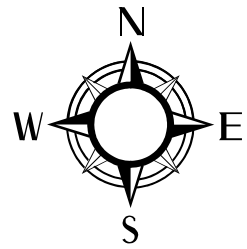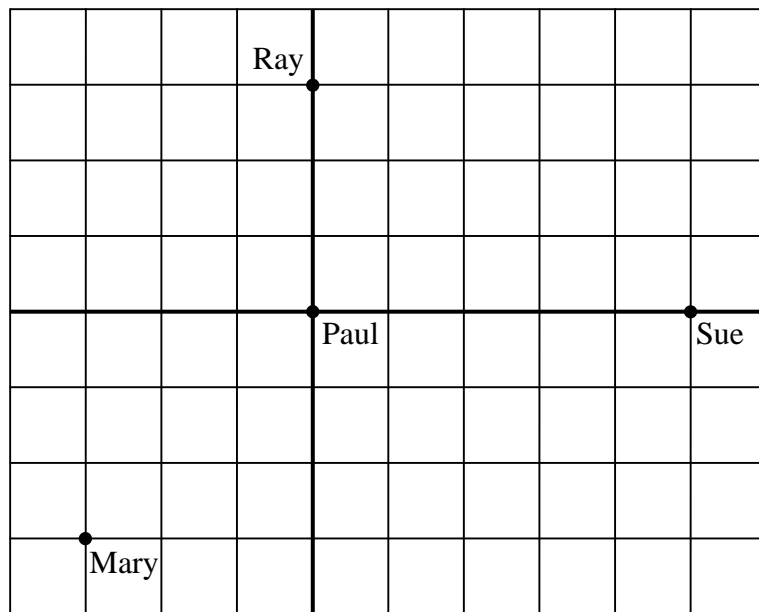
a) Fill in the blank space with the correct compass direction.

   Sue is 20 metres to the _____ of Paul.

b) i) Use your ruler to measure the distance between Sue and Ray.

   The measurement on the ruler is _____ **cm**;

   ii) Find the actual distance in **metres**.

   _____ **m**

c) One way Mary can go to Paul is by:

   i) walking **12 m East** then **12 m North**.

   Use distance and compass directions to describe two other ways how Mary can go to Paul.

   ii) _____

   iii) _____

16. a) **A** and **B** are two empty boxes. Write the name of each box:

    i) Box A _____   ii) Box B _____

    b) Paul works out the volume of box **A** and
       the volume of box **B**.

       Work out the volumes of **A** and **B**.

    Volume of A: **Volume of B:**

    _____ **cm**^{3} _____ **cm**^{3}

20 cm A 30 cm 25 cm

25 cm B 25 cm 25 cm

    Paul fills box A completely with water.
    Can he pour **all** this water into box B?   _____.

    Why? _____

_____

17. Rita, Sue and Ann work out the **perimeter** of this rectangle.
    a) Fill in the **circles** with $+, -, \times$ or $\div$
       and write a **number** in **each box** to complete their working.

5 cm

3 cm

    Rita: 5 cm ◯ 3 cm ◯ 5cm ◯ 3 cm = ☐ cm

    Sue:
    5 cm × ☐ = ☐ cm
    3 cm × ☐ = + ☐ cm
    ─────────────
    Ans: ☐ cm

    Ann: (5 cm + 3 cm) ◯ 2 = ☐ cm

    b) Work out the **perimeter** of this shape.

6·7 cm
2·4 cm   3·9 cm
2·4 cm   3·9 cm
6·7 cm

       _____ **cm**

18. In a shop window there is this sale advert.
An owner of a Restaurant needs to buy some chairs.
He can buy **in lots** of **4**, **6** and **10 only**.

a) Find the total cost of the **cheaper** way to buy **12** chairs only.

Buy 4 ... pay Lm16
Buy 6 ... pay Lm23
Buy 10 ... pay Lm35

Lm _____

b) Find the total cost of the **cheapest** way to buy **18** chairs only.

Lm _____

c) He wants to spend **exactly** Lm93.
How many chairs can he buy?

_____ **chairs**

19. Father wants to share 21 sweets among Glenn, Ruth and Claire.
He plans to share the sweets in one of the following three ways.
Find out how many each child receives and fill in the tables if:

a) he decides to share the sweets **equally** between them.

	Glenn	Ruth	Claire
Number of sweets			

b) he decides to give **both** Glenn and Claire three sweets **less** than Ruth.
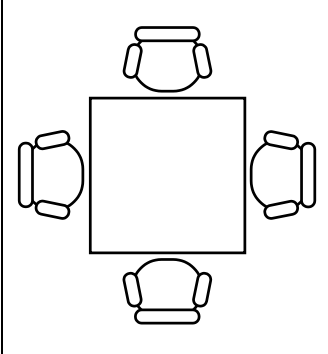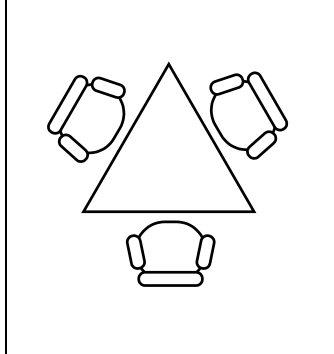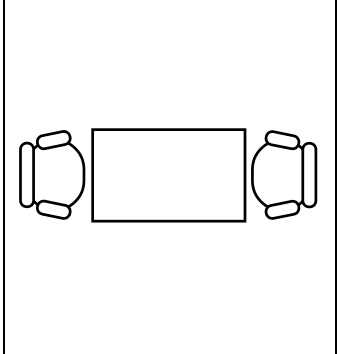(**Help:** *Use your results in* (**a**) *to answer this question*)

	Glenn	Ruth	Claire
Number of sweets			

c) He decides to give Ruth **two sweets more** than Glenn and **one sweet more** than Claire.
(**Help:** *Use your results in* (**a**) *to answer this question*)

	Glenn	Ruth	Claire
Number of sweets			

20. I can use three types of tables for my party.

Table shape	Square	Triangular	Rectangular
Seating plan			
Number of places	4	3	2

a) For my birthday party I use:

4 square tables, 5 triangular tables and 10 rectangular ones.

If all **places are taken** and **all guests are seated** how many guests do I have at my party?

_____ **guests**

b) At my sister's party there are **30** guests. She uses 5 square tables.
The rest are **triangular** and **rectangular** tables.
Work out the number of **triangular** and **rectangular** tables she uses if **all places are taken** and **all guests are seated**.

_____ **triangular tables**

_____ **rectangular tables**

END OF PAPER