JUNIOR LYCEUM ANNUAL EXAMINATIONS - 2003

Educational Assessment Unit - Education Division

FORM 2   MATHEMATICS (NON-CALCULATOR PAPER)   TIME: 10 minutes
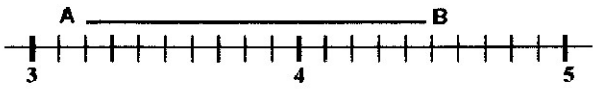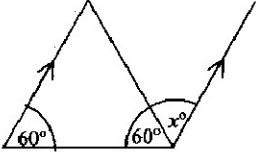
Name _____

Class _____

Mark

- ANSWER ALL QUESTIONS.
- EACH QUESTION CARRIES 1 MARK.
- CALCULATORS, RULERS, PROTRACTORS AND OTHER MATHEMATICAL INSTRUMENTS ARE NOT ALLOWED.
- WRITE DOWN YOUR ANSWER ONLY IN THE SPACE PROVIDED.
- THIS PAPER CONTAINS 10 QUESTIONS.

DO NOT WRITE IN THIS SPACE

QUESTION	ANSWER
1. Express 34500 in standard form.	
2. Work out $2\frac{2}{3} + 1\frac{1}{3} - 1$.	
3. Write down the value of 2^{-2}.	
4. Express the length of AB correct to two significant figures.	
5. Give an estimate of $\sqrt{921}$ correct to the nearest whole number.	
6. A man leaves Malta International Airport at 10:30 p.m. He arrives in Frankfurt on the following morning at 01:45 a.m. How long did the flight take?	
7. Find angle x.	
8. A line has equation $y = 3x + 5$. What is the gradient?	
9. Find the mean of the numbers 10.5, 13, 17.5, 7.5, 1.5	
10. $y = \dfrac{x+1}{x+2}$. What is the value of y when $x = 8$? Give your answer as a decimal.	

JUNIOR LYCEUM   ANNUAL EXAMINATIONS 2003

Educational Assessment Unit - Education Division

FORM 2	MATHEMATICS (Main Paper)	TIME: 1 h 50 min

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NC	Main	Global Mark
Mark																		

DO NOT WRITE ABOVE THIS LINE

Name _____

Class _____

> **CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN**

ANSWER ALL QUESTIONS.

1. In a certain week a factory worker earns Lm120 from which income tax is deducted at 25%. Find the amount which remains after paying tax .

(4 marks)

---

2. Simplify:

(a) $p + p + p =$ _____

(b) $p \times p \times p =$ _____

(c) $p^2 + p^2 =$ _____

(d) $p^2 \times p^2 =$ _____

(4 marks)

---

3.   Correct each number to one significant figure and work out an estimate for each of the following (**show all your working**):

(a)   102.2 × 1.8   Ans. _____

(b) $(0.046)^2$ Ans. _____

(4 marks)

4.   (a)   Complete the following:

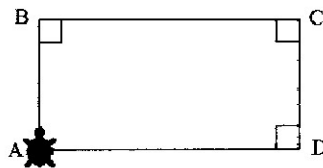A trapezium has one pair of _____ sides _____ .

(b)   Draw a trapezium with one line of symmetry.

(4 marks)

5.   This is a LOGO question.
ABCD is a rectangle in which AD is twice AB in length. AB is 30 turtle steps long. Complete the following command so that the turtle draws the rectangle ABCD.

repeat ___ [fd ___ rt 90 fd ___ rt ___]

(4 marks)

6. A rectangle measures x cm long by y cm wide.
Write down a formula for:

(a) The total perimeter P of the rectangle.
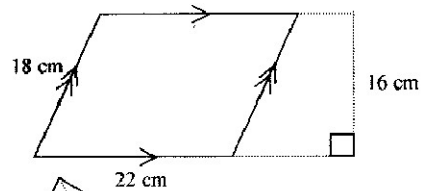
Ans. _____

(b) The area A of the rectangle. Ans. _____

If $x = 12.5$ and $y = 6.75$ work out the values of P and A correct to one decimal place.

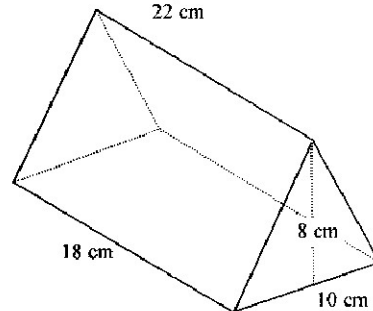Ans. $P =$ _____ $A =$ _____

(6 marks)

7. (a) Find the area of the
parallelogram shown.

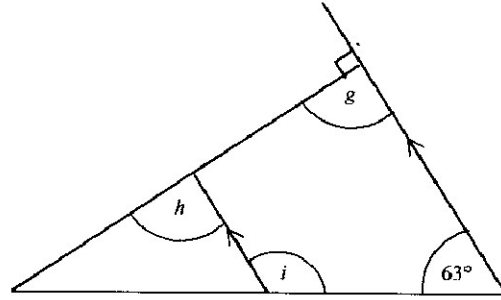(b) Calculate the volume of
the given prism.

(6 marks)

8. On the graph paper provided draw axes for x from -4 to 5 and for y from 0 to 5.
Draw triangle PQR by plotting the points P(1,2), Q(3, 2) and R(3, 5).
Draw the image P′Q′R′ when the triangle PQR is reflected in the y-axis.

(6 marks)

9. Calculate the size of each marked angle.
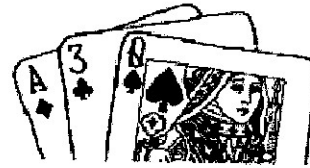   Give reasons.

10. (a) One card is drawn at random from an ordinary pack of
         52 playing cards. What is the probability that

    (i) a red card is drawn?

                          Ans. _____

    (ii) a heart is drawn?

   Ans. _____

    (b) An ordinary six-sided dice is thrown. What is the probability that the score is

    (i) greater than 3?

                          Ans. _____

    (ii) less than 3?

                          Ans. _____

    (c) A bricklayer building a wall can lay 288 bricks in 4 hours when working on his own. How
         many bricks will he lay in 6 ½ hours?

11. This information about the shoe sizes of 30 people has been collected:

3	5 ½	3	5	3 ½	4	4	2	4 ½	3
5 ½	6	4	2	3	5	3 ½	4	2 ½	3
4 ½	4	5 ½	4 ½	3	3 ½	3	4	2 ½	5

(a) Complete the following frequency table:

Shoe size	2	2 ½	3	3 ½	4	4 ½	5	5 ½	6
Tally	I I	I I	┼┼┼┼ I I						
Number of people	2	2							

(b) Answer the following questions:

   (i) What is the range of the shoe sizes?   Ans. _____

   (ii) Which shoe size is the most common?   Ans. _____

   (iii) Which shoe size is the least common?   Ans. _____

(8 marks)

12. Solve the following equations:

(a) $2x + 5 = x + 9$

(b) $4(2p - 3) = 2(3p - 5)$

(c) $\dfrac{y}{3} + \dfrac{1}{4} = 1$

Ans: $x =$ _____

Ans. $p =$ _____

Ans: $y =$ _____

(8 marks)

13. Copy and complete the following table and use it to draw the graph of $y = x + 2$.

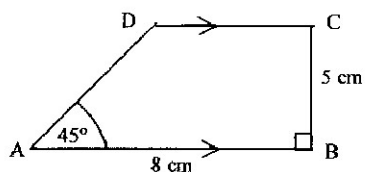| x	-3	-1	1	3
y	-1			5

From your graph read

(i)   the value of y where the line cuts the y-axis.   Ans. _____

(ii)   the value of x where the line cuts the x-axis.   Ans. _____

(iii) the value of x where $y = 4$.   Ans. _____

(8 marks)

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14. Construct the figure ABCD shown using only a ruler and a pair of compasses.

A •

(8 marks)

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15. (a) The angles of a triangle are in the ratio of 4 : 5 : 6. Find each angle.

(b) The hourly rate at a factory for a 40-hour week is Lm 4. Overtime is paid at time-and-a-half. In one week Thomas works 42 hours. Calculate his gross pay.

(8 marks)

End of paper

FORM 2						MATHEMATICS (Main Paper)								TIME: 1 h 50 min				

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	NC	Main	Global Mark
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Name _____

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> **CALCULATORS ARE ALLOWED BUT ALL NECESSARY WORKING MUST BE SHOWN**

ANSWER ALL QUESTIONS.

1. In a certain week a factory worker earns Lm120 from which income tax is deducted at 25%. Find the amount which remains after paying tax .

(4 marks)

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2. Simplify:

    (a) $p + p + p =$ _____

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(4 marks)

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3. Correct each number to one significant figure and work out an estimate for each of the following (**show all your working**):

(a) 102.2×1.8 Ans. _____

(b) $(0.046)^2$ Ans. _____

(4 marks)

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4. (a) Complete the following:

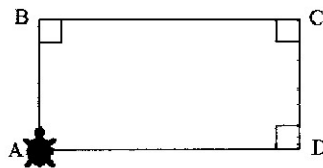A trapezium has one pair of _____ sides _____ .

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(4 marks)

6. A rectangle measures x cm long by y cm wide.
    Write down a formula for:

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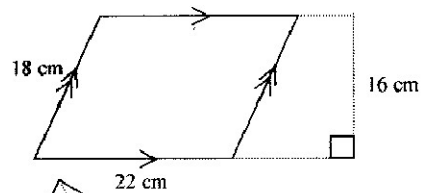   Ans. _____

    (b) The area A of the rectangle.   Ans. _____

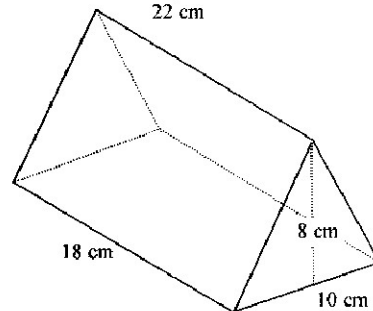   If $x = 12.5$ and $y = 6.75$ work out the values of P and A correct to one decimal place.

    Ans. $P =$ _____ $A =$ _____

    (6 marks)

7. (a) Find the area of the
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18 cm   16 cm

22 cm

    (b) Calculate the volume of
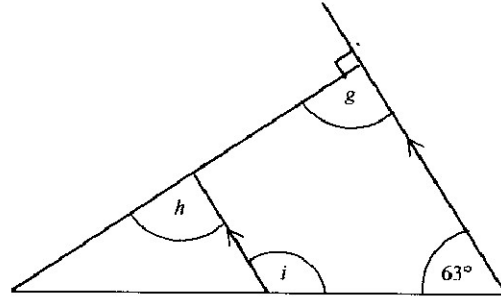   the given prism.

18 cm   8 cm   10 cm

    (6 marks)

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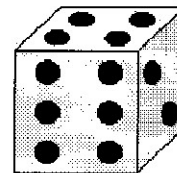

    Ans. _____

    (ii) a heart is drawn?

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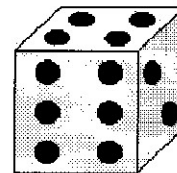
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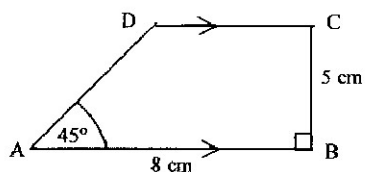| x	−3	−1	1	3
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                                                                                      (8 marks)

_____

                                                                                      End of paper