

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2005

Educational Assessment Unit - Education Division

FORM 2

MATHEMATICS (NON-CALCULATOR)

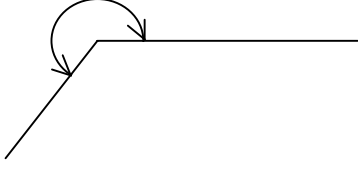
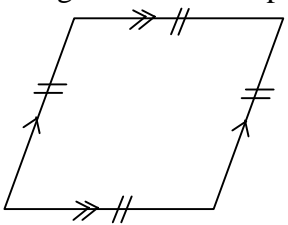
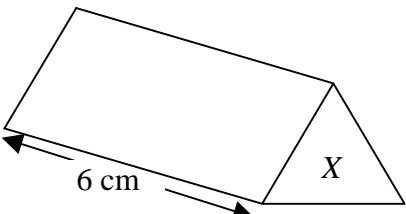
TIME: 10 minutes

Name _____

Class _____

Mark

-
- Answer **ALL** Questions.
 - Each question carries 1 mark.
 - **Calculators, rulers, protractors** and other **mathematical instruments** are **not allowed**.
 - On your desk you should have nothing except for **pen, pencil** and the **examination paper**.
 - Write down your answer only in the space provided.

	Question	Space for working if required
1.	What is the value of $24 + 28 \div 4$? _____	
2.	Find the difference between: $\frac{3}{4}$ of Lm 4.80 and 60 % of Lm5. _____	
3.	Change 5.14 km to metres. _____	
4.	Estimate the size of this angle.  _____	
5.	Give a rough estimate: $3.2^2 \times \sqrt{16.2}$ _____	
6.	$\frac{a}{5} = 10$. What is the value of a ? _____	
7.	What is the name given to this shape?  _____	
8.	Find the value of: $4^2 + 3^{-1}$. _____	
9.	What is the probability of choosing a prime number from the numbers 1 to 9? _____	
10.	A prism has a volume of 48.6 cm^3 . What is the area of face X?  _____	

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FORM 2

MATHEMATICS (Main Paper)

TIME: 1h 50 min

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total Main	Non- Calc	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. Write:

(a) 6.847 correct to 2 decimal places

Ans: _____

(b) 5748 correct to the nearest ten

Ans: _____

(c) $\sqrt{39}$ correct to 2 significant figures

Ans: _____

(d) 679.7 in standard form

Ans: _____

(4 marks)

2. (a) Write as a single expression in index form:

(i) $3^5 \times 3^3 \times 3^{-4}$

Ans: _____

(ii) $4^{-3} \times 4^8 \div 4^2$

Ans: _____

(b) Find the range and the median of the following set of numbers:
34, 28, 36, 24, 38, 17.

(i) Range _____

(ii) Median _____

(4 marks)

3. This question is about **LOGO**.

(a) Complete the following **REPEAT** command so that the turtle draws a rectangle:

PD REPEAT _____ [FD 200 RT 90 FD 80 RT _____]

(b) Find, in turtle steps, the perimeter of this rectangle.

Ans: _____
(4 marks)

4. (a) Work out giving your answer correct to 3 significant figures.

$$\frac{4.81^2 \times 6.09}{148.6}$$

Ans: _____

(b) Work out giving your answer in standard form correct to 2 decimal places.

$$\sqrt{\frac{12.4}{94.6}}$$

Ans: _____

(4 marks)

5. (a) Simplify the ratio: 4.5 kg : 90 g.

Ans: _____

(b) Lm48 is divided among three children so that Martin gets three times as much as James and Lyn gets twice as much as James. How much does Lyn get?

Ans: _____
(4 marks)

6. (a) 64 kg of copper are used to make 40,000 screws.
What is the weight, in grams, of one of these screws?

Ans: _____

(b) Mr. Cassar uses 60 kg of food to feed his 40 pigs every week. He buys another ten pigs.
How much food will he now need, every week, to feed all his pigs?

Ans: _____
(6 marks)

7. A is the point (1, 2) and B is the point (2, 6).

(a) Plot the points A and B.

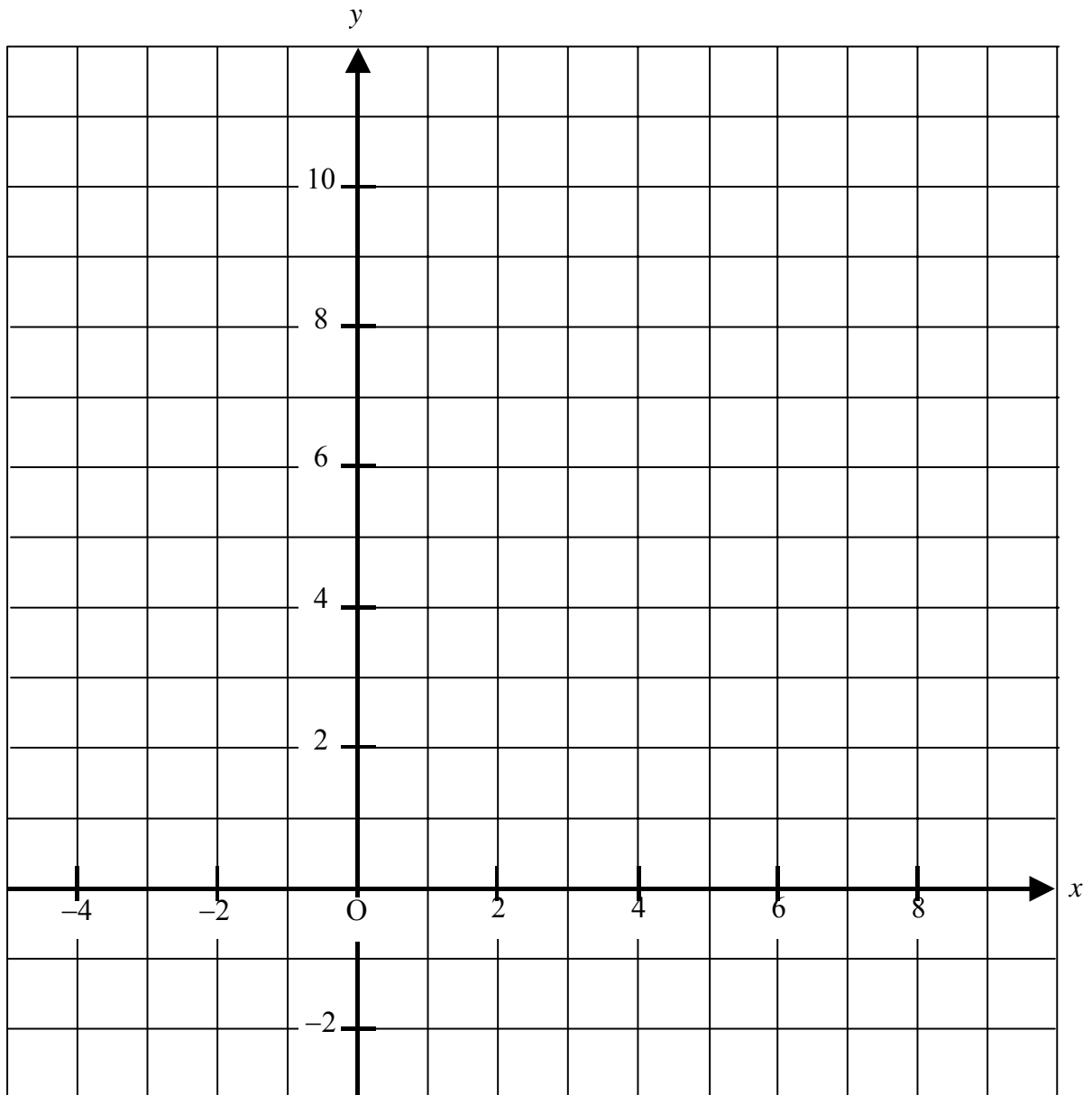
(b) Draw the line segment AB.

A' B' is the image of AB under the translation $\begin{pmatrix} -4 \\ 2 \end{pmatrix}$.

(c) Draw the line segment A' B'.

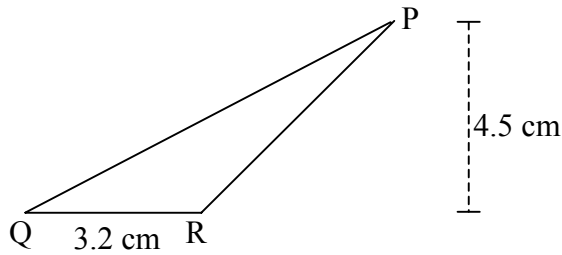
(d) Write the co-ordinates of A' and B'.

A' = (____, ____). B' = (____, ____).



(6 marks)

8. (a) Find the area of triangle PQR.

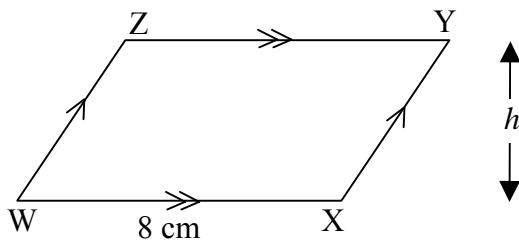


Ans: _____

- (b) I double the length of QR but leave the area of ΔPQR the same. What will be the height of this new triangle?

Ans: _____

- (c) The area of a parallelogram WXYZ is 40.8 cm^2 . If WX = 8 cm long, what is the length of the distance h ?



Ans: _____

(6 marks)

9. **Use ruler and compasses only.**

- (a) Construct ΔABC in which $BC = 8 \text{ cm}$, angle $ABC = 60^\circ$ and $AB = 6 \text{ cm}$.

- (b) Measure angle ACB.

$\angle ACB = \underline{\hspace{2cm}}^\circ$

- (c) Construct the perpendicular from A to BC.

(6 marks)

10. (a) Given that $x = 3y - t$, make t the subject of the formula.

Ans: _____

(b) Given that $a = 3$, $b = -2$ and $c = -4$, find the value of $ab - bc$.

Ans: _____

(c) Solve the equation:
 $5(x - 2) = 4$.

Ans: _____

(6 marks)

11. (a) The map ratio of a map is $1 : 25000$. A road is represented on the map by a line that is 4.8 cm long. What is the real length, in metres, of the road?

Ans: _____

(b) Complete

(i) A square has _____ lines of symmetry.

(ii) An equilateral triangle has rotational symmetry of order _____.

(iii) A regular hexagon has _____ axes of symmetry and rotational symmetry of order _____.

(8 marks)

12. (a) The mean of five numbers is 8. The numbers are 6, 7.5, x , x , and 9.5. What is the value of x ?

Ans: _____

(b) During a sale a shopkeeper gives a discount of 25%. What is the sale price of a computer which is usually sold for Lm 960?

Ans: _____

14. (a) Complete the table below for $y = 3x - 1$.

x	-2	-1	0	1	2	3	4
$3x$	-6			3			12
-1	-1			-1			-1
y	-7			2			11

- (b) On the graph paper provided and using a scale of 2 cm to represent 1 unit on the x -axis and 1 cm to represent 1 unit on the y -axis, draw the graph of $y = 3x - 1$.
- (c) Write down the co-ordinates of the point where the line cuts the y -axis.
Co-ordinates (,).
- (d) What is the x co-ordinate of a point on this graph if its y co-ordinate is 14?
(8 marks)
-

15. (a) Work out correct to 2 **decimal places**:

- (i) The area of a circle whose diameter is 6.4 cm.

Ans: _____

- (ii) The volume of a cylindrical tin of radius 4.5 cm and height 8 cm.

Ans: _____

- (b) The table shows the marks obtained by a class of 30 pupils in a Maths test.

Mark	1 – 10	11 – 20	21 – 30	31 – 40	41 – 50
Frequency	5	6	10	6	3

On the graph paper provided draw a bar chart to show the above information.

(8 marks)
