JUNIOR LYCEUMS ANNUAL EXAMINATIONS - 2000

Educational Assessment Unit - Education Division

FORM 1 **MATHEMATICS (MENTAL)** **TIME: 15 minutes**

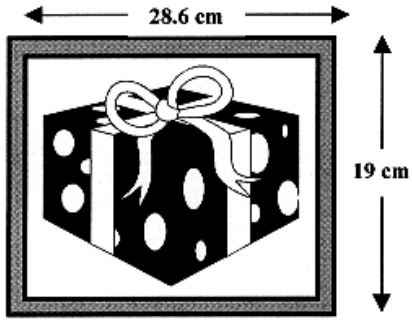
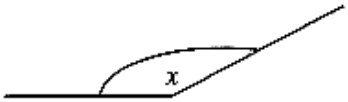
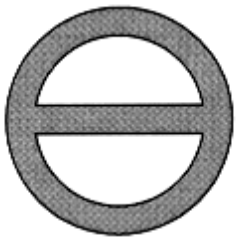
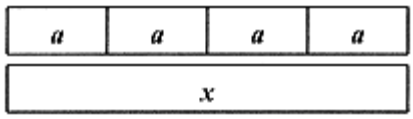
Name _____

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.**

DO NOT WRITE IN THIS SPACE

QUESTION	ANSWER
1. Find the value of: **½ + ¼ + ½.**	_____
2. A packet of peanuts costs 12 cents and a packet of juice costs 13 cents. What is the cost of 3 packets of peanuts and 3 packets of juice?	_____
3. Change 4.55 litres to cm^3. (**1 litre = 1000 cm^3**)	_____
4. The temperature in Berlin on Saturday 1st January at 8.00 a.m. was 2° C. At 10.00 p.m. the temperature was 8° colder. What was the temperature at 10.00 p.m.?	_____
5. Gareth thinks of a number. He multiplies this number by 4 and adds 2; the result is 14. What is the number?	_____
6. In order to make this picture frame the total length of wood I need is approximately: (A) 100 cm (B) 40 cm (C) 71 cm (D) 220 cm. 	_____
7.  The size of angle x is about: (A) 40° (B) 100° (C) 150° (D) 170°.	_____
8. How many right angles are there in one complete revolution?	_____
9.  This shape has: (A) rotational symmetry only (B) both line and rotational symmetry (C) line symmetry only (D) no line and no rotational symmetry.	_____
10. Choose the correct statement. (A) $a = x + 4$ (B) $x = 4a$ (C) $x = a + 4$ (D) $a = 4x$. 	_____

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2000

Educational Assessment Unit - Education Division

FORM 1 **MATHEMATICS (Main Paper)** **TIME: 1 h 45 min**

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

DO NOT WRITE ABOVE THIS LINE

Name _____

Class _____

CALCULATORS ARE NOT ALLOWED

ANSWER ALL QUESTIONS.

1. The prices of a 500g packet of tortellini in seven different shops are Lm1.34, Lm1.46, Lm1.38, Lm1.42, Lm1.37, Lm1.44 and Lm1.32.
   Work out:
   (a) the mean price of a packet of tortellini;

   _____

   (b) the range of these prices.

   _____

(4 marks)

2. If $x = -2$ and $y = 4$ work out the value of:
   (i) $y + x$ (ii) $2y + x$ (iii) $y + 2x$.

   _____ _____ _____

(4 marks)

3. (a) Write down the missing terms in this pattern:

6.4, 3.2, 1.6, _____, _____, 0.2.

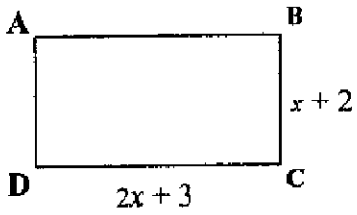
(b) Look at the numbers: **7, 9, 13, 15, 17.** From these choose any **three different** numbers whose sum is 33.

_____, _____, _____ .

(4 marks)

4. ABCD is a rectangle.

(a) Write down the perimeter of ABCD in terms of x.



_____

(b) The perimeter of ABCD is 22 cm.
Work out a value for x.

_____

(4 marks)

5. Arrange in order of size, smallest first:

(a) 4.56, 0.465, 46.5, 4.65, 0.0465

_____, _____, _____, _____, _____ .

(b) $\frac{5}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{9}{10}$.

_____, _____, _____, _____ .

(4 marks)

6. (a) Construct triangle XYZ in which XY = 7.5 cm, YZ = 6.5 cm and angle XYZ is 80°.

X

(b) Measure the length of XZ. **XZ** = _____ cm

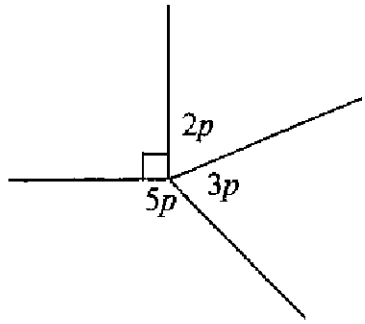
(6 marks)

7. (a) Simplify: (i) $5a - 2b + 3a + 4b$ (ii) $4p - 3r - 2p - r$.

(b) Tara bought x files at Lm3 each and $2x$ files at Lm2 each. She spent Lm14 altogether. Form an equation in x and solve it to find x.

(6 marks)

8. (a) Work out the value of p.



$p =$ ____ °

(b) On the diagram mark:
(i) an acute angle;
(ii) a right angle;
(iii) an obtuse angle.

(6 marks)

9. (a) Simplify $2(3x + 5y) + 3(x - 5y)$.

(b) Solve $4(x - 2) = 2x - 6$

(6 marks)

10. (a) Using only the numbers: [1, 2, 3, 4, 5, 12, 16, 17, 18], write down:

(i) **all** the prime numbers. [_____]

(ii) **all** the multiples of 3. [_____]

(iii) **all** the multiples of both 2 **and** 3. [_____]

(b) Find the difference between $\frac{5}{6}$ of Lm6.48 and $\frac{3}{8}$ of Lm8.32.

(6 marks)

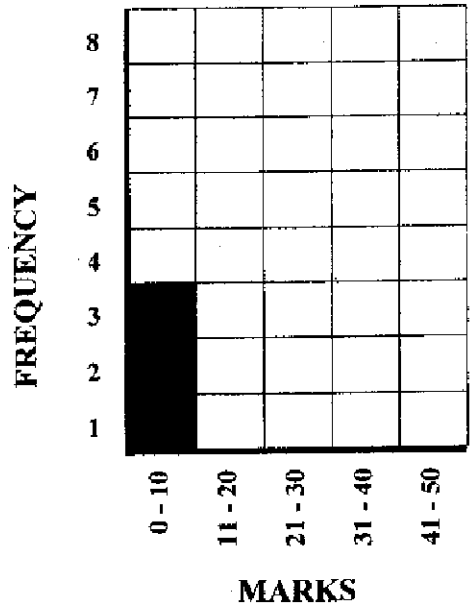
11. Mr. Marks gave a mathematics test to his Form 1 students. These are the marks scored by the 25 students in his class. The test carried a total of 50 marks.

21	37	39	31	5
34	20	42	45	25
26	36	24	29	19
45	14	20	13	25
30	38	9	10	42

(a) Complete the following table:

Mark	Tally	Frequency
0 – 10	///	3
11 – 20		
21 – 30		
31 – 40		
41 - 50		
	TOTAL	25

(b) Complete the bar chart to represent this information.



(c) The pass mark for this test was 25. What percentage of the students passed?

(8 marks)

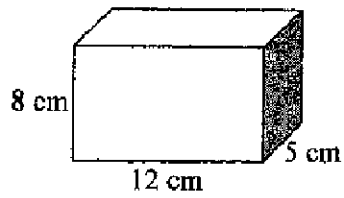
12. (a) Complete: (i) 5 km 213m = _____ m (ii) 2464 cm^2 = _____ m^2.

(b) A closed box has the shape of a cuboid. The box is 12 cm long, 5 cm wide and 8 cm high.

(i) How many faces does the box have?

_____ faces.

(ii) How much space does one box take?



_____ cm^3.

(iii) Thomas has a large cardboard box which has a volume of 36 000 cm^3. How many of the small closed boxes can he pack in the large cardboard box?

_____ boxes.

(8 marks)

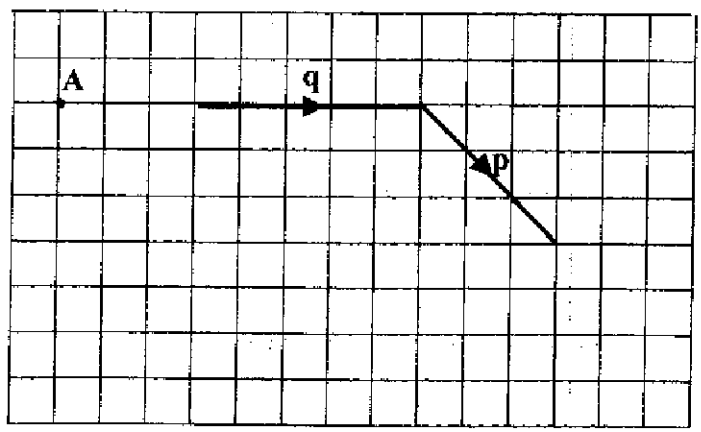
13. (a) If $\mathbf{a} = \begin{pmatrix} 4 \\ 3 \end{pmatrix}$, $\mathbf{b} = \begin{pmatrix} -3 \\ -3 \end{pmatrix}$, and $\mathbf{c} = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$, work out:

(i) $\mathbf{a} + \mathbf{b} = \begin{pmatrix} \quad \end{pmatrix}$ (ii) $\mathbf{a} + \mathbf{b} + \mathbf{c} = \begin{pmatrix} \quad \end{pmatrix}$

(b) The diagram shows two vectors **p** and **q**.

(i) Complete: $\mathbf{p} = \begin{pmatrix} \quad \end{pmatrix}$; $\mathbf{q} = \begin{pmatrix} \quad \end{pmatrix}$; $2\mathbf{p} = \begin{pmatrix} \quad \end{pmatrix}$.

(ii) Starting at A, draw a diagram to represent 2**p**.



8 marks)

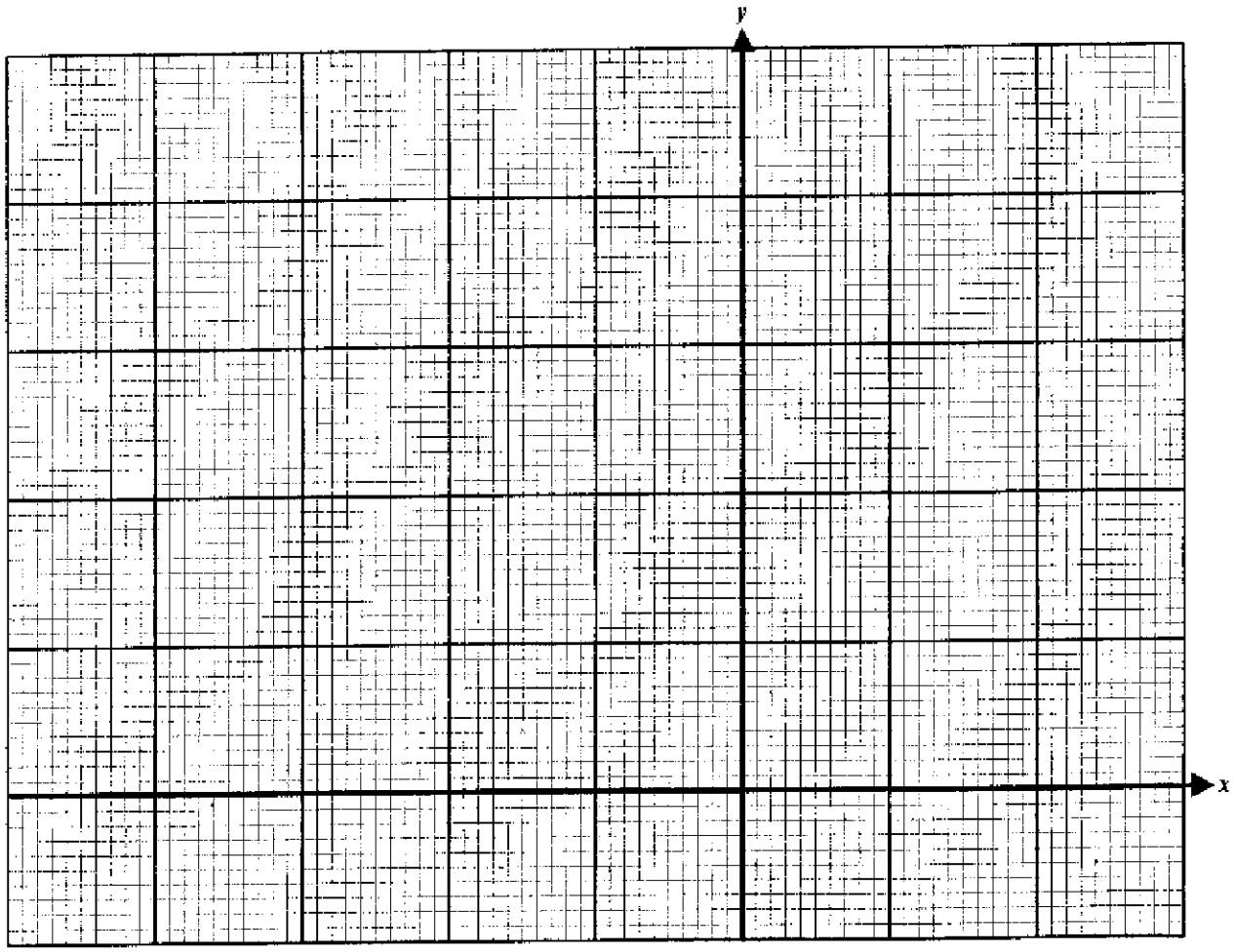
14. (a) Which is cheaper and by how much:
2 kg of meat at Lm1.20 per 500g or 2 kg of another type of meat at 54c per 200g ?

(b) A sum of money is shared between Kurt and Diane such that Kurt takes 40% and Diane takes the rest. Diane takes Lm12.60. How much money does Kurt take?

(8 marks)

15. (a) On the graph paper below and using a scale of 2 cm for 1 unit on both axes plot the following points: A(−1, 4), B (−3, 2), C (−3, 0), D (1, 0) and E (1, 2).
(b) Join the points AB, BC, CD, DE, and EA.
(c) Draw the line of symmetry of ABCDE.
(d) Join BD to meet CE at M.
(e) Mark the point M and write down its coordinates.

Co-ordinates of point M (,).



(8 marks)