JUNIOR LYCEUMS ANNUAL EXAMINATIONS – 2001

Educational Assessment Unit – Education Division

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

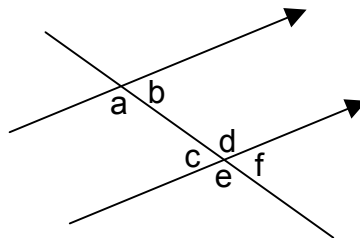Name _____

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

QUESTIONS	ANSWERS
1. Write **0.07877** correct to **3 decimal places**.	_____
2. What is the value of: $4\frac{1}{2} + 3\frac{1}{4} - \frac{3}{4}$?	_____
3. $2p$ is the same as: A) $p \times p$ B) $p + p$ C) $p + 2$ D) $2(p + p)$.	_____
4. Estimate the value of: $$\frac{58 \times 73}{99}.$$	_____
5. Janice bought 3 pencils at 20 cents each. She received a 10c coin and a 5c coin as change. How much money did she give the shopkeeper?	_____
6. Find the value of: 706 – 686.	_____
7. 2 km 11 m is the same as: A) 2.11 km B) 2.011 km C) 2.101 km D) 0.211 km.	_____
8. When Ian subtracts 6 from a certain number, he gets 9. What is the number?	_____
9. Which one of the following letters has both rotational and line symmetry? I J K L M	_____
10. Which of the following statements is correct? A) a = c B) b = e C) d = c D) b = f	_____

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FORM 1   **MATHEMATICS (Main Paper)**   **TIME: 1h 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.

1a Find the value of:
   27.86 + 9.5 – 30.847.

 b Write down:
   (i) 342 correct to the nearest ten   _____

   (ii) 2768 correct to the nearest hundred   _____

(4 marks)

2   REPEAT 2 [FD 100 RT 90 FD 40 RT 90]

Edwin types the above command when he is using LOGO.

(a) Draw a rough sketch of the shape that the turtle will draw.

(b) Work out, giving your answer in turtle steps, the total distance travelled by
    the turtle in order to draw this shape.

(4 marks)

3 From the set of numbers:

45,   46,   47,   48,   49,   50,   51

write down:

(a) an **even** number   _____

(b) a **square** number   _____

(c) a **prime** number   _____

(d) a number which is a **multiple** of both 6 and 8.   _____

<div align="right">(4 marks)</div>

4 (a) Simplify:

(i) $-7 + 4 - 3$ (ii) $3x - 4y - x + 5y$

(b) If $p = 3$ and $q = -2$, work out the value of:

(i) $p - q$ (ii) $2p + 3q$

<div align="right">(4 marks)</div>

5 (a) Express 75% as a fraction.
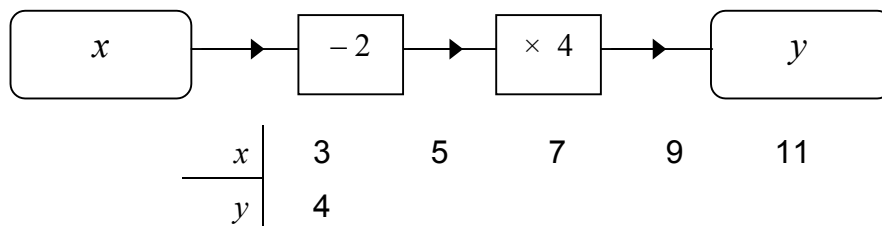
(b) Work out: $(17.64 \div 10) + (0.147 \times 100)$.

(c) Express 18 cm as a percentage of 3 metres.

(d) Write down the missing term in this pattern:

1,   3,   7,   13,   ___,   31,   43.

<div align="right">(4 marks)</div>

6   The diagram shows a function machine.

x → -2 → $\times 4$ → y

x	3	5	7	9	11
y	4				

This function machine changes the numbers in the top row to the numbers in the bottom row.

(a) Complete the table.

(b) If x is -1, what is the value of y?   _____

(c) If y is 16, what is the value of x?   _____
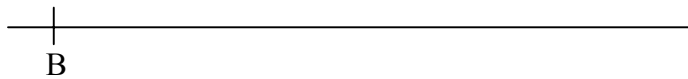
<div align="right">(6 marks)</div>

7 (a) On the given line mark a point C so that BC = 5.4 cm.

   (b) Construct a triangle ABC such that AB and AC are each 7 cm long.

   (c) Measure and write down the size of each angle of triangle ABC.

Angle A = _____

Angle B = _____

Angle C = _____

B

(6 marks)

8 (a) Work out:

   (i) $3\frac{3}{4} + 5\frac{1}{8} - 4\frac{1}{2}$

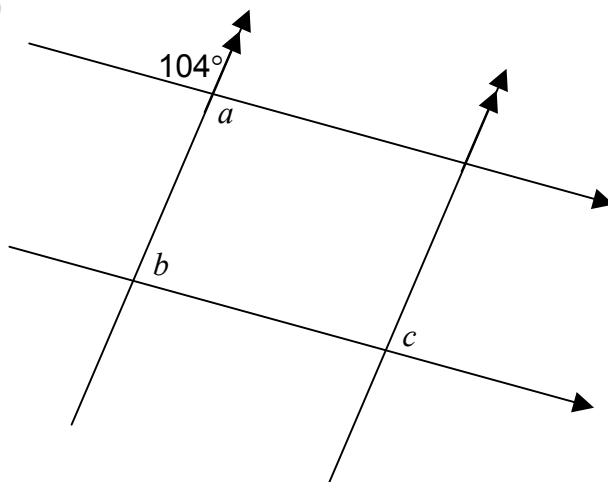   (ii) $3\frac{3}{4} \div 2$

   (b) Look at these numbers.
       Arrange them in order of size, smallest first:

       4.001,   4,   4.101,   4.1,   4.01

   _____   _____   _____   _____   _____

(6 marks)

9

104°

a

b

c

Find the angles marked *a, b, c*.
Give reasons for your answers.

a = _____° (   )

b = _____° (   )

c = _____° (   )

(6 marks)

10 (a) Put >, <, or = in the spaces below:

(i)   0.87   ☐ $\frac{7}{8}$

(ii) $1\frac{2}{5}$ ☐   1.40

(b) Complete the following:

(i) A rectangle has **rotational symmetry** of order _____.

(ii) An equilateral triangle has ____ **lines of symmetry**.

(iii) A letter of the alphabet which has **line symmetry** only is _____.

(iv) A letter of the alphabet which has both **line** and **rotational symmetry** is _____.

(6 marks)

11 (a) Simplify:

$3(2x + 1) - 4(x - 1)$

(b) Solve:

$5(x - 2) = 2(2x - 1)$

(c) The length of a side of a square is $(3x + 1)$ cm.

(i) Write down, in terms of x, the perimeter of the square.

(ii) Given that $x = 2$ cm, calculate the area of the square.

(8 marks)
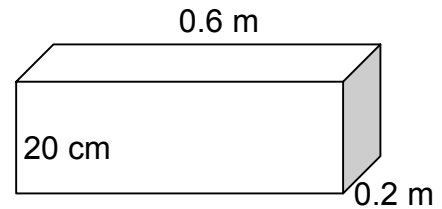
12 (a) Complete: (i) 2176 cm = _____ m

(ii) 417 mm^2 = _____ cm^2

(b) An empty plastic fish tank is 0.6 m long, 0.2 m wide and 20 cm high.

   Work out:

(i)   the volume of the fish tank, in cm^3;

0.6 m

20 cm

0.2 m

(ii)   the number of litres the tank holds when it is full.

(iii) The fish tank weighs 840 grams when empty. The tank is filled with water. If 1 cm^3 of water weighs 1 gram, what is the total weight, in kilograms, of the tank when it is only **half** full?
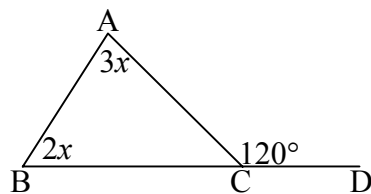
(8 marks)

13 (a) What is

75% of 640
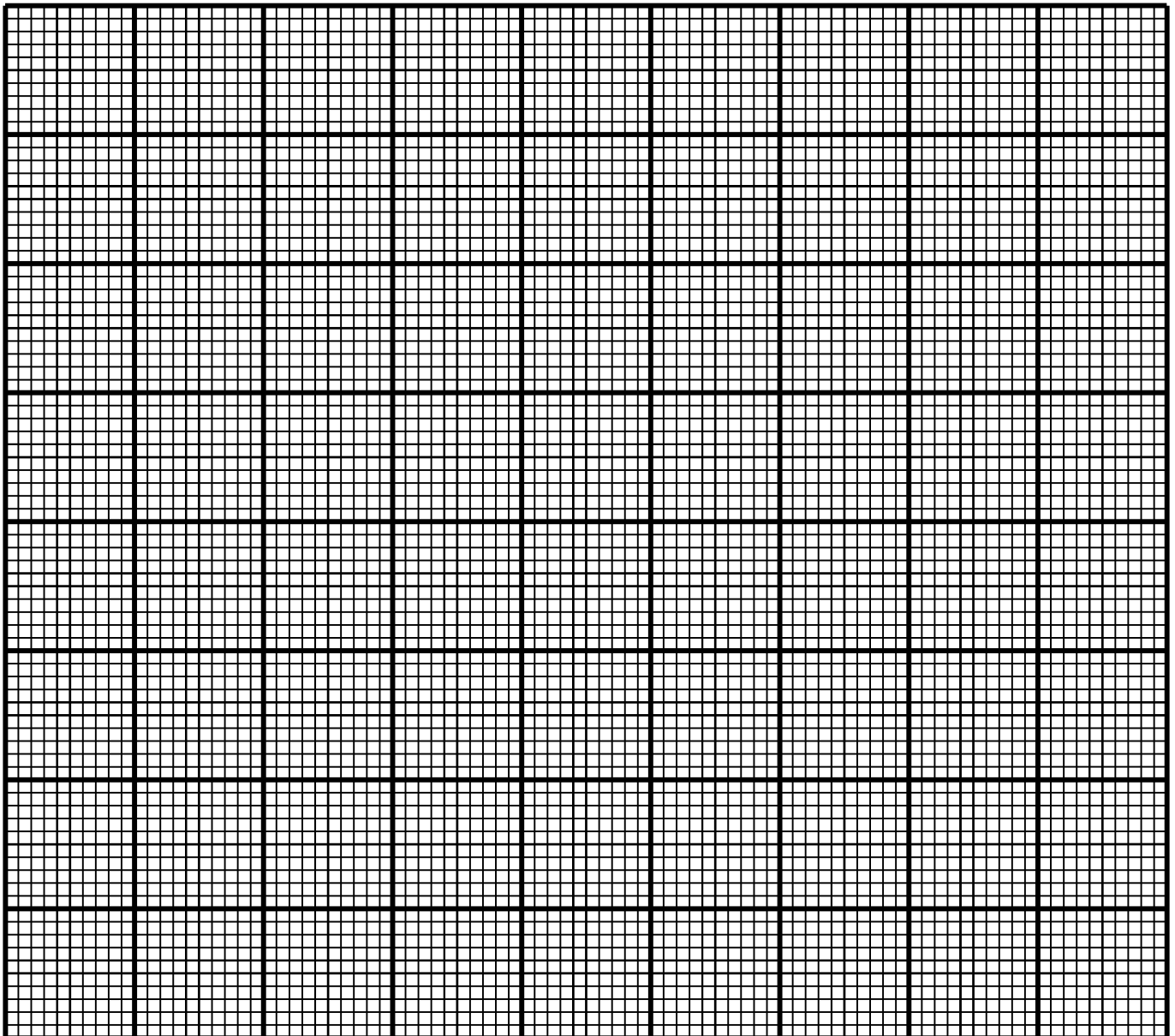
(b) Work out the difference between $\frac{4}{5}$ of Lm6.20 and 0.5 of Lm4.80.

(c) ABC is a triangle. Work out the size of ∠A, ∠B, and ∠C.

A

3x

2x 120°

B   C   D

(8 marks)

14 (a) On the graph paper plot the points A(–4, –1), B(4, 2) and C(4, –4).

(b) Join A to B, B to C and C to A.

(c) What is the name given to this type of triangle?

Triangle ABC is _____.

(d) Draw the line of symmetry of △ABC.

(e) This line meets BC at Z.

The co-ordinates of point Z are (_____ , _____).

(8 marks)

15 A class was asked about their favourite colour. Each student was asked to choose from:
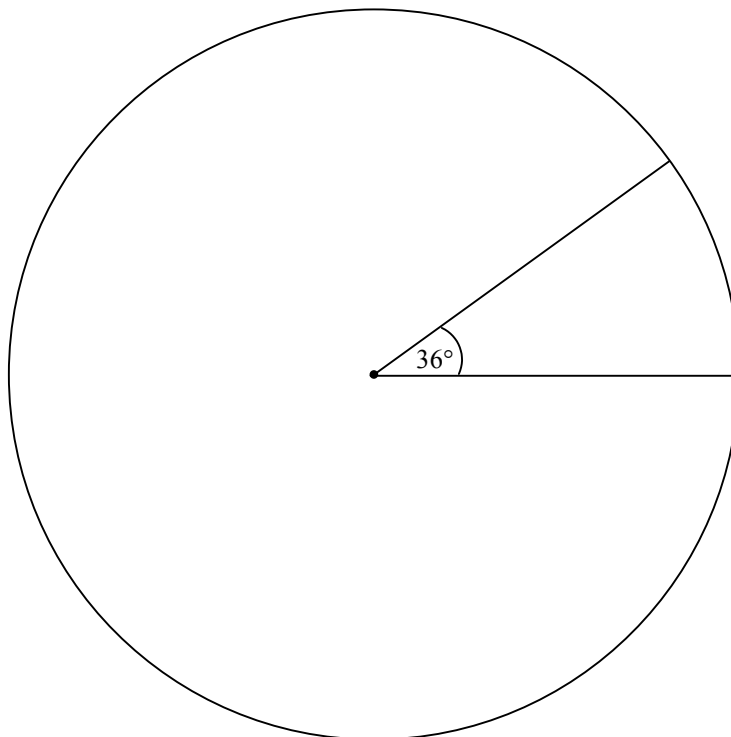
YELLOW   BLACK   GREEN   WHITE   PINK

The result was as follows:

G	Y	B	W	P	B
P	P	B	W	B	W
B	P	P	W	B	
G	B	G	B	G	Y
B	B	B	W	Y	P

Use the above result to complete the table below:

Colour	Yellow	Black	Green	White	Pink
Frequency	3				
Angle	36°				

Use this table to draw the pie-chart.

36°

(8 marks)

END OF EXAMINATION PAPER

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