SECONDARY SCHOOL ANNUAL EXAMINATIONS 2004

Educational Assessment Unit - Education Division

FORM 4   **MATHEMATICS (NON-CALCULATOR PAPER)**   **TIME: 20 min.**
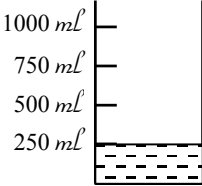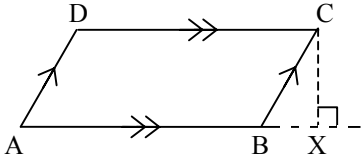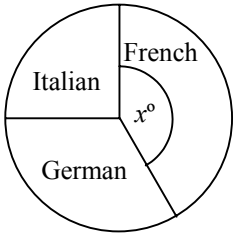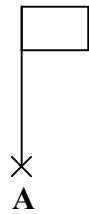
Name _____   **Class** _____
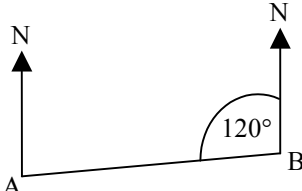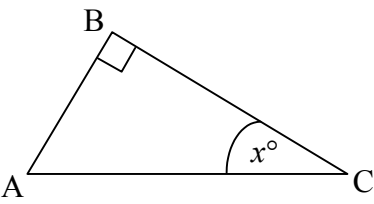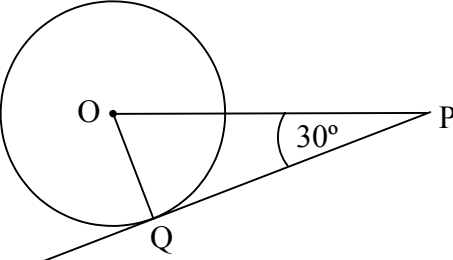
Mark

INSTRUCTIONS TO CANDIDATES:

- **ANSWER ALL QUESTIONS. THERE ARE 20 QUESTIONS TO ANSWER.**

- **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.**

- **TO ANSWER QUESTIONS INVOLVING NUMERICAL CALCULATIONS YOU ARE ADVISED TO CHOOSE AND USE THE MORE EFFICIENT TECHNIQUES (MENTAL OR PAPER-AND-PENCIL).**

- **YOU ARE NOT REQUIRED TO SHOW YOUR WORKING. HOWEVER SPACE FOR WORKING IS PROVIDED IF YOU NEED IT.**

QUESTION	SPACE FOR WORKING IF REQUIRED
1. Calculate: $10 - 2 \times 3$ **Ans:** _____	
2. Write 3600 in **standard form**. **Ans:** _____	
3. Express the volume of the liquid as a fraction of a litre. **Ans:** _____	
4. Give a rough estimate of 4.8^2 **Ans:** _____	
5. In two hours a car travelling at 50 km/h covers a distance of: a) 75 km b) 100 km c) 25 km d) 50 km **Ans:** _____	
6. The area of parallelogram ABCD is 24 cm^2. The height CX is 4 cm. How long is **AB**? **Ans:** _____	
7. What is the value of A in A = $\frac{x}{y}$ when $x = 8$ and $y = 2$? **Ans:** _____	

	QUESTION	SPACE FOR WORKING IF REQUIRED
8.	The equation of a line is $y = 3x + 2$. What is the **gradient** of this line? **Ans:** _____	
9.	In a class, $\frac{1}{3}$ study French, $\frac{1}{4}$ study Italian and the rest study German. What is the size of **angle x°**? **Ans:** _____	
10.	I throw an ordinary 6-sided dice. What is the probability that I will **NOT** score a 6? **Ans:** _____	
11.	Work out $\frac{1}{2} + \frac{3}{4}$. **Ans:** _____	
12.	Write the answer of $4^5 \div 4^2$ in **index form**. **Ans:** _____	
13.	A worker packs 200 boxes of oranges in 1 hour. How many boxes does he pack in 2 hours? **Ans:** _____	
14.	Give in its simplest form the ratio 32 : 40 **Ans:** _____	

	QUESTION	SPACE FOR WORKING IF REQUIRED
15.	A clothes shop gives a discount of 20%. How much do I save in all when I buy a suit worth Lm60 and a raincoat worth Lm40? **Ans:** _____	
16.	Work out the bearing of B from A. N N 120° B A **Ans:** _____	
17.	Rotate the figure 90º anticlockwise about point A. Draw its image. × **A**	
18.	Complete the statement: B A $x°$ C $\tan x = \dfrac{AB}{\square}$	
19.	QP is a tangent to the circle. What size is the angle QOP? O 30º P Q **Ans:** _____	
20.	Write the missing command to draw a rectangle using Logo. start PD REPEAT 2 [FD 50 _____ FD 100 RT 90]	

END OF PAPER

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| FORM 4 | | | | MATHEMATICS (Main Paper) | | | | | | | | TIME: 1 h 40 min. | |

Question	1	2	3	4	5	6	7	8	9	10	11	Total Main	Non Calculator	**Global Mark**
Mark														

DO NOT WRITE ABOVE THIS LINE

Name _____   **Class** _____

ANSWER ALL QUESTIONS.

1. a) Write 46·81, 21·32 and 17·05 correct to 1 significant figure.

      _____, _____, _____ .

    b) Give a **rough estimate** for the value of $\dfrac{46\cdot81 \times 21\cdot32}{17\cdot05}$
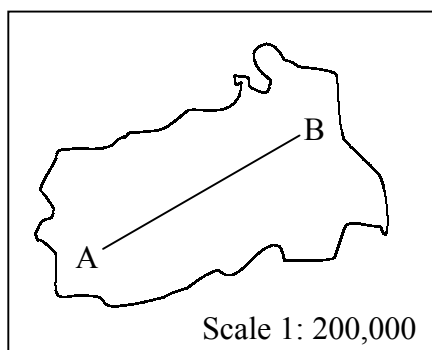
      Ans: _____

    c) Work out, using **your calculator** $\dfrac{46\cdot81 \times 21\cdot32}{17\cdot05}$. Give your answer correct to 2 decimal places.

      Ans: _____

      7 marks

2. A and B are two towns on an island. They are shown on a map with scale 1 : 200,000.

    a) Measure the distance between A and B on the map. Give your answer in centimetres.

      Ans: _____ cm.

    b) What is the actual distance on the island between town A and town B? Give your answer in kilometres.

      Ans: _____ km.

      4 marks

3. Work out
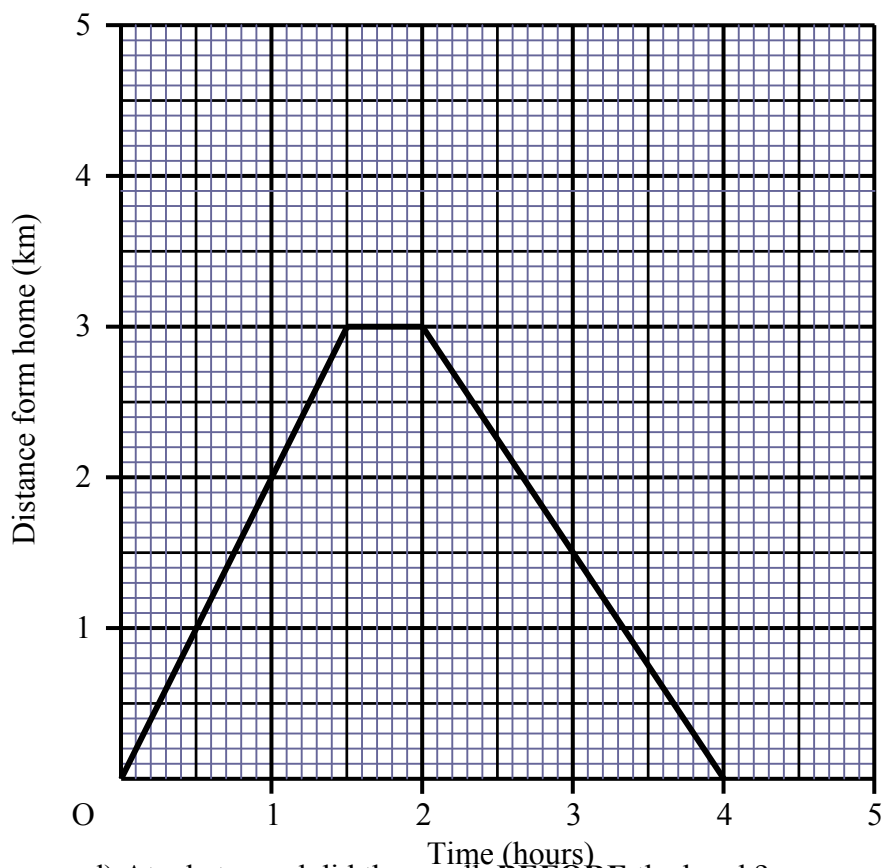   a) $3\frac{5}{8} + 2\frac{1}{2}$

   b) $3\frac{1}{3} - 1\frac{1}{5}$

   c) $2\frac{1}{2} \times \frac{4}{5}$

   d) $3\frac{1}{8} \div 3\frac{3}{4}$

8 marks

4. Miriam and Ronald went for a walk. During the walk they stopped for a short break.
   The graph below shows their journey. Use the graph to answer these questions:

Distance form home (km)

Time (hours)

a) How long did their walk take?

Ans: _____

b) How many kilometres did they walk in all?

Ans: _____

c) How long was their **break**?

Ans: _____

d) At what speed did they walk **BEFORE** the break?

Ans: _____

e) What was their average speed for the **whole** walk, including the break?

Ans: _____

9 marks

5.   John went on holiday in Germany. Before leaving Malta he changed Lm500 to euro.

   a)   If Lm1 ≡ 2·34 euro, how many euro did he get?

Ans: _____

   b)   After his holiday he had €84 left.
        He changed them to Lm at the same rate. How many Maltese liri did he get?
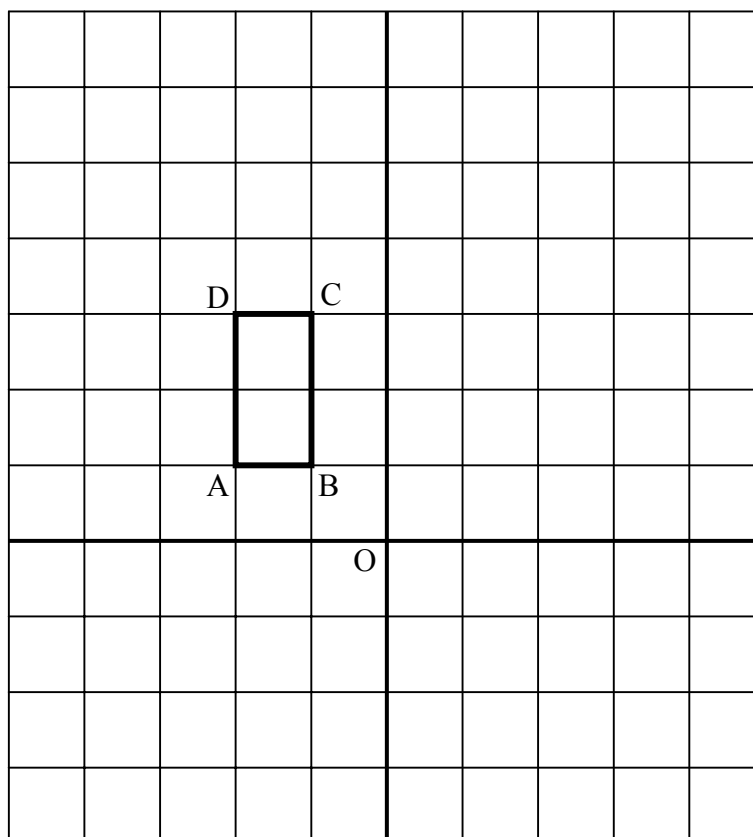   Give your answer to the nearest cent.

Ans: _____

6 marks

6.   a)   Reflect ABCD in the y-axis. Label the image A'B'C'D'.

   b)   Translate A'B'C'D' using the vector $\begin{pmatrix} 0 \\ -4 \end{pmatrix}$. Label the image A"B"C"D".
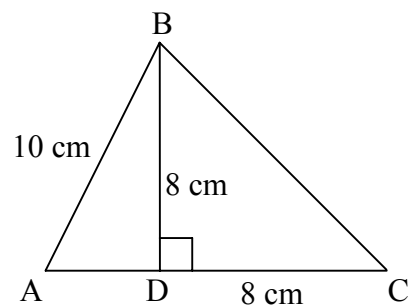
   c)   Enlarge ABCD by a scale factor 2 using the centre of enlargement O.
        Label the image A'''B'''C'''D'''.

8 marks

7. ABC is a triangle and BD is its perpendicular height.
   BD = DC = 8 cm
   AB = 10 cm

   a) Find side BC.
      Give your answer correct to 2 decimal places.

Ans: _____
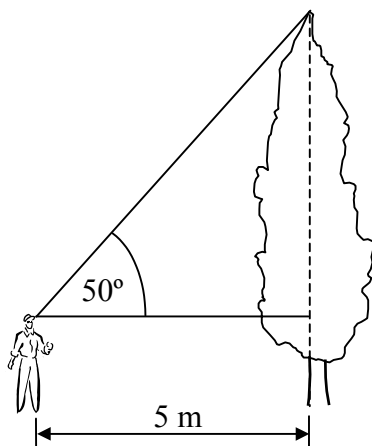
   b) Find AD.

Ans: _____

   c) Find the area of triangle ABC.

Ans: _____

9 marks

8. A man 1·5 m tall views the top of a tree at an angle of elevation of 50º
    He is 5 m away from the foot of the tree.

    Calculate the height of the tree. Give your answer correct to 2 decimal places.

Ans: _____

5 marks

9.

	A	B	C	D
1	Item Name	Unit Price (cents)	Quantity	Total Cost
2	Pencils	8	3	
3	Rulers	10	2	
4	Copybooks	12	10	
5	Grand Total			
6				

The above spreadsheet is used to calculate the cost of some stationery.

a) What formula is used in cell D2 to calculate the total cost of 3 pencils at 8 cents each?

Ans: = _____

b) What formula is used in cell D5 to get the grand total of the shopping?

Ans: = _____

c) Fill in with correct values the cells in the range D2:D5.

_____ 6 marks

10. a) Simplify: $2(7x + 3) + 4(x - 2)$

Ans: _____

b) Factorise: $12\,y^2 - 4y$

Ans: _____

c) Make c the subject of the formula $a = 2b + c$.

Ans: _____

d) Mary bought 3 packets of sweets for 60 cents.
Each packet costs x cents.
Write down an equation and find the value of x.

Ans: _____

6 marks

11. The marks of a Maths test of a class of 20 students are as follows:

<div>
65   70   55   45   80   77   33   62   82   70
</div>
<div>
54   63   75   70   82   63   59   23   45   28
</div>

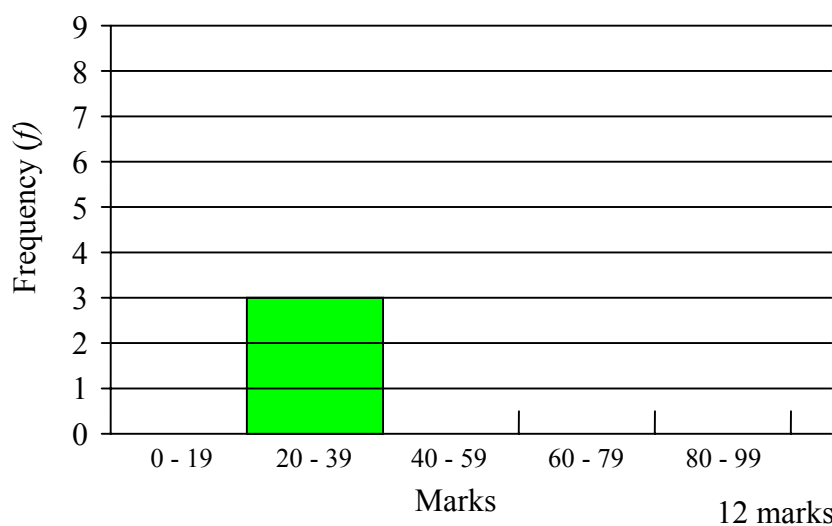a) Find   i. the **mode**.

Ans: _____

ii. the **median**.

iii. the **mean** mark (correct to the nearest whole number)

b) Complete the frequency table:

Marks	Tally	Frequency (*f*)
0 – 19		
20 – 39		
40 – 59		
60 – 79		
80 – 99		

c) Complete the histogram.

12 marks

END OF PAPER