

# SECONDARY SCHOOL ANNUAL EXAMINATIONS 2007

Educational Assessment Unit – Education Division

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**FORM 3**

**MATHEMATICS (NON-CALCULATOR PAPER)**

**TIME: 10 minutes**

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**Name:** \_\_\_\_\_

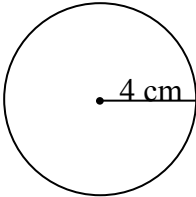
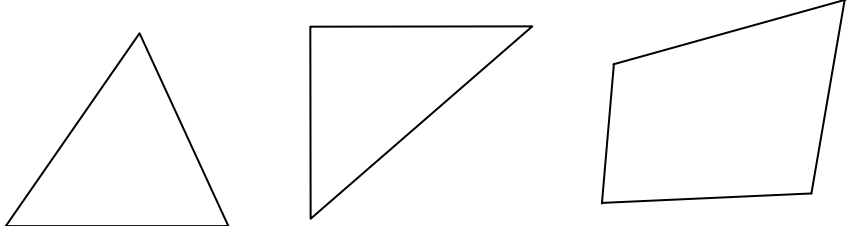
**Class:** \_\_\_\_\_

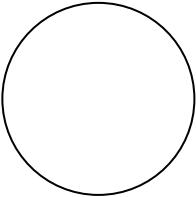
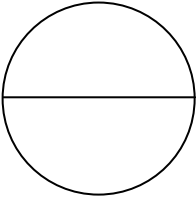
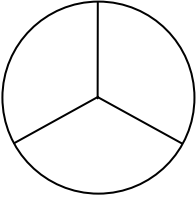
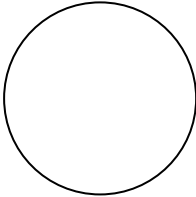
Mark

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## INSTRUCTIONS TO CANDIDATES

- **Answer all questions. There are 10 questions to answer.**
- **Each question carries 1 mark.**
- **Calculators, protractors and other mathematical instruments except rulers are not allowed.**
- **You are not required to show your working. However space for working is provided if you need it.**

Questions	Space for working if required
<p>1. Choose the correct answer.</p> <p>The LCM of 4 and 10 is</p> <p>A. 2      B. 20      C. 80      D. 40</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>2. Work out: <math>8 - (-5) + (-6) - 2</math>.</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>3. Anthony spends <math>\frac{3}{5}</math> of his pocket money and saves the rest. What fraction of his pocket money does he save?</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>4. Take <math>\pi</math> equal to 3 to estimate the area of a circle whose radius is 4 cm.</p> <div style="text-align: center;">  </div> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>5. Choose the correct answer.</p> <p>The sum of the angles of the two triangles is <b>more than/less than/the same as</b> the sum of the angles of the quadrilateral.</p> <div style="text-align: center;">  </div> <p style="text-align: right;"><b>Ans:</b> _____</p>	

<p>6. Complete the 4th pattern.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>1st</p> </div> <div style="text-align: center;">  <p>2nd</p> </div> <div style="text-align: center;">  <p>3rd</p> </div> <div style="text-align: center;">  <p>4th</p> </div> </div>	
<p>7. If <math>a = 3</math> and <math>b = 5</math>, what is the value of <math>2a + 3b</math>?</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>8. The shoe sizes of a group of children are:</p> <p style="padding-left: 40px;">38, 40, 39, 38, 39, 40, 39.</p> <p style="padding-left: 40px;">What is the mode of these sizes?</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>9. The probability that we have snow in July in Malta is</p> <p style="padding-left: 40px;">A. 1      B. 0.8      C. 0.2      D. 0</p> <p style="text-align: right;"><b>Ans:</b> _____</p>	
<p>10. Complete this LOGO program to get a square:</p> <p style="padding-left: 40px;">PD Repeat ____ [FD 100 RT 90]</p>	

# SECONDARY SCHOOL ANNUAL EXAMINATIONS 2007

Educational Assessment Unit – Education Division

**FORM 3**

**MATHEMATICS (Main Paper)**

**TIME: 1h 50min**

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

**DO NOT WRITE ABOVE THIS LINE**

Name : \_\_\_\_\_

Class : \_\_\_\_\_

**CALCULATORS ARE ALLOWED**

**ANSWER ALL QUESTIONS.**

1. (a) (i) The square root of 65 is approximately:

A. 6      B. 9      C. 8      D. 12

Ans: \_\_\_\_\_

- (ii) What number multiplied by itself three times gives 64 ?

Ans: \_\_\_\_\_

- (b) Find correct to 3 significant figures :

(i)  $\sqrt{65}$

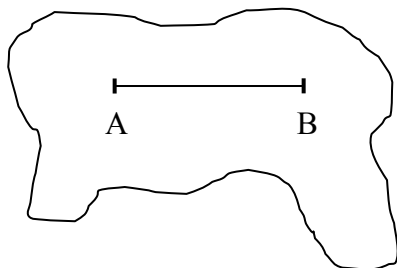
Ans: \_\_\_\_\_

(ii)  $\sqrt[3]{815}$

Ans: \_\_\_\_\_

(4 marks)

2. This is the map of an island.



Scale: 1cm represents 2km.

- (a) Measure and write down the distance of A from B on the map.

**Ans:** \_\_\_\_\_ cm

- (b) What is the actual distance in kilometres on the island?

**Ans:** \_\_\_\_\_ km

- (c) What is the distance on the map for a distance of 6km on the island?

**Ans:** \_\_\_\_\_ cm

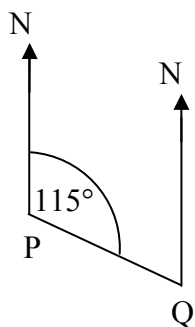
(4 marks)

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3. (a) A ship sails on a bearing of  $045^\circ$ . In which direction does it sail?

A. North      B. North East      C. South East      D. West.

**Ans:** \_\_\_\_\_

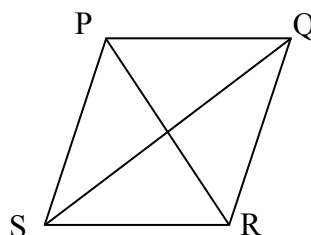
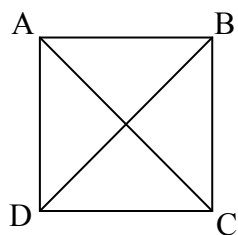
- (b) The bearing of Q from P is  $115^\circ$ . What is the bearing of P from Q?



**Ans:** \_\_\_\_\_

(4 marks)

4. Look at the square ABCD and the rhombus PQRS.



Complete these statements:

- (a) Each shape has its sides \_\_\_\_\_
- (b) The interior angles of the square are all equal to \_\_\_\_\_
- (c) The interior opposite angles of the rhombus are \_\_\_\_\_
- (d) The diagonals of both shapes bisect each other at \_\_\_\_\_

(4 marks)

5. (a) Write down the next three numbers in this sequence:

120, 60, 30, \_\_\_\_\_

- (b) The rule for another sequence is: Start with 3 and add 4 to the previous term.

Write down the first five terms.

\_\_\_\_\_

(4 marks)

6. (a) Simplify:  $8x + 7x - 9 - 9x + 5$ .

- (b) Expand:  $7(3y - 5)$ .

Ans: \_\_\_\_\_

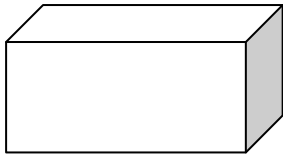
- (c) Factorize:  $8z^2 - 18z$ .

Ans: \_\_\_\_\_

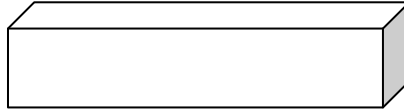
Ans: \_\_\_\_\_

(6 marks)

7.



A



B

The volume of each cuboid is  $72\text{cm}^3$ . Their measurements are given in the table.

	Volume	Length	Breadth	Height
Cuboid A	$72\text{cm}^3$	6cm	4cm	_____
Cuboid B	$72\text{cm}^3$	_____	3cm	2cm

(a) Work out the height of cuboid A.

**Ans:** \_\_\_\_\_ cm

(b) Work out the length of cuboid B.

**Ans:** \_\_\_\_\_ cm

(6 marks)

8. (a) Solve:  $7x - 11 = 3$ .

**Ans:** \_\_\_\_\_

(b) There are  $x$  crayons in a box.  
Jane has 2 full boxes of crayons and another 9 extra crayons.  
She has 33 crayons altogether.

Write an equation in  $x$  and solve it to find how many crayons are there in each box.

**Ans:** \_\_\_\_\_

(6 marks)

9. Marilyn and Robert are playing a game by tossing two dice at a time.

(a) Complete the possibility space to show all the possible outcomes.

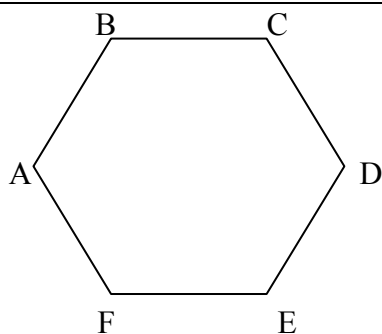
		Dice 1					
		1	2	3	4	5	6
Dice 2	1						
	2						
	3						
	4						
	5						
	6						

(b) What is the probability that the score shows even numbers on both dice?

Ans: \_\_\_\_\_

(6 marks)

10.



ABCDEF is a regular hexagon.

(a) Find the size of one exterior angle of this shape.

Ans: \_\_\_\_\_

(b) Simon is writing a LOGO program to draw the hexagon. Can you help him by filling in the blank spaces? Start from A.

PD RT 30 REPEAT \_\_\_\_ [FD 50 RT \_\_\_\_] HOME.

(c) Complete the LOGO program for Simon to draw an equilateral triangle of side 50 turtle steps.

PD RT 30 REPEAT \_\_\_\_ [FD 50 RT \_\_\_\_] HOME.

(6 marks)



11. Joyce is using a spreadsheet to calculate the area and perimeter of different rectangles.

	A	B	C	D	E	F
1	Rectangles	Length (cm)	Breadth (cm)	Area (cm <sup>2</sup> )	Perimeter (cm)	
2	1st	5.2	4.4	22.88	19.2	
3	2nd	7.3	3.7			
4						

(a) What formula did she write in cell D2?

Ans: \_\_\_\_\_

(b) What formula did she write in cell E2?

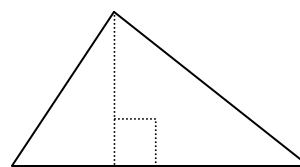
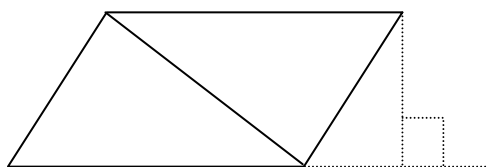
Ans: \_\_\_\_\_

(c) What numbers will appear in cells D3 and E3?

Ans: \_\_\_\_\_

(8 marks)

12.



The area of the parallelogram is  $35\text{cm}^2$ . Its height is 5cm.

The area of the triangle is  $17.5\text{cm}^2$  and its base is 7cm.

(a) Work out:

(i) the length of the base of the parallelogram, (ii) the length of the height of the triangle.

Ans: \_\_\_\_\_

Ans: \_\_\_\_\_

(b) What do you notice about:

(i) the base of both shapes,

Ans: \_\_\_\_\_

(ii) the height of both shapes,

Ans: \_\_\_\_\_

(iii) the area of both shapes?

Ans: \_\_\_\_\_

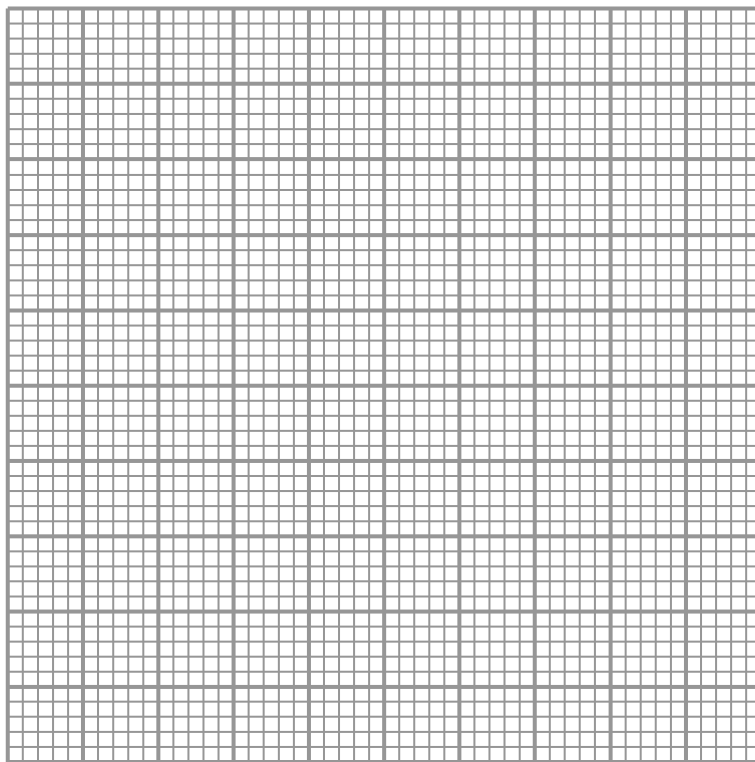
(8 marks)

13. (a) Complete the table of values for the graph:

$$y = 2x + 1$$

$x$	$-2$	$0$	$2$
$y$			

- (b) Draw suitable axes on the grid and plot the straight-line graph  $y = 2x + 1$ .



- (c) (i) What is the value of  $y$  when  $x = 1$ ?

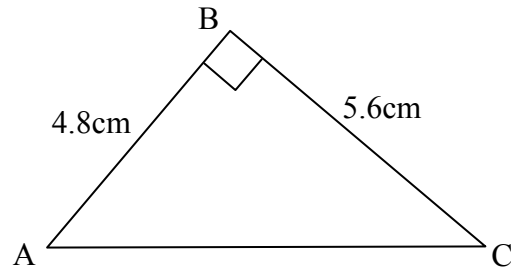
**Ans:**  $y =$  \_\_\_\_\_

- (ii) What is the value of  $x$  when  $y = 4$ ?

**Ans:**  $x =$  \_\_\_\_\_

(8 marks)

14.

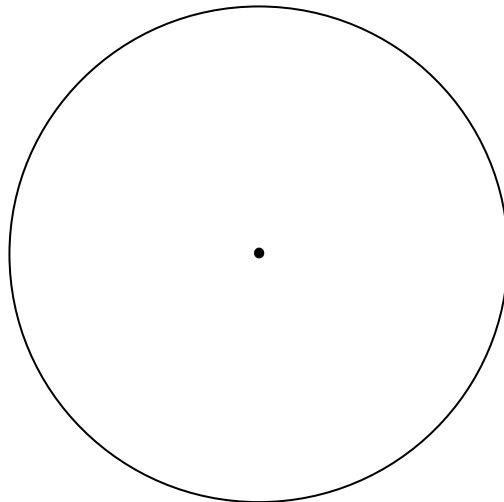


- (a) Work out, correct to 3 significant figures, the length of side AC.

**Ans:** \_\_\_\_\_ cm

- (b) In a class of 24 students, half of them like football whilst from the others, 9 like basketball and the rest like volleyball.  
 (i) Complete the table.  
 (ii) Draw a pie chart to represent the likings of these students.

	No. of students	Fraction
Football		$\frac{1}{2}$
Basketball	9	$\frac{3}{8}$
Volleyball		
total	24	1



(8 marks)

15. 350 students voted for the school council.  
 Natasha got 112 votes. Susan got 46% of the votes and Sonia got the rest.

- (a) What percentage of votes had Natasha?

**Ans:** \_\_\_\_\_

- (b) How many votes had Susan?

**Ans:** \_\_\_\_\_

- (c) How many votes had Sonia?

**Ans:** \_\_\_\_\_

- (d) Who obtained the greatest number of votes?

**Ans:** \_\_\_\_\_

(8 marks)

END OF PAPER