



Centre Number	Candidate Number

MINISTRY OF EDUCATION AND HUMAN RESOURCES DEVELOPMENT

SOLOMON ISLANDS FORM THREE EXAMINATION

2017

MATHEMATICS

WEDNESDAY 1st NOVEMBER 9.00AM

**TIME: 2 HOURS plus
10 min. Reading time**

<u>SECTION</u>	<u>CONTENT</u>	<u>MARKS</u>
A	Multiple Choice Questions	20
B	Short Answer Questions	40
C	Long Answer Questions	<u>40</u>
	TOTAL	<u>100</u>

INSTRUCTIONS TO CANDIDATES

1. Do not open this Booklet until you are told to do so.
2. Write both your Centre Number and Candidate Number in the box provided at the top right hand corner and the back flap at the end of this booklet.
3. Before you answer the questions, read through the instructions carefully.
4. Write all your answers in the spaces provided in this Booklet.
5. Calculators should not be used.
6. Three figure tables are provided.
7. Show all your workings for Sections B and C. You may lose some marks if you do not show your working.

THIS BOOKLET CONTAINS 19 NUMBERED PAGES.

SECTION A: MULTIPLE CHOICE**(20 MARKS)****WRITE THE LETTER OF THE MOST CORRECT ANSWER IN THE BOX PROVIDED IN THE BACK FLAP.**

1. Which statement is correct?
 - A. There are 10mm in 1cm
 - B. There are 100mm in 1cm
 - C. There are 10cm in 1mm
 - D. There are 100cm in 1mm.

2. Which one of the following numbers is the median of 8, 1, 3, 6, 0, 5, 9, 6, 1?
 - A. 5
 - B. 6
 - C. 8
 - D. 9

3. $\frac{2m^2+m}{m}$ simplified to its simplest term is
 - A. $2(m^2 + n)$
 - B. $2(m^2 + 1)$
 - C. $2m + 1$
 - D. $2(m + n)$

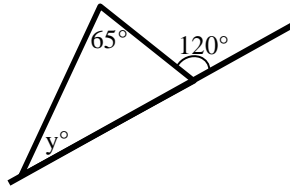
4. $10^2 \div 10^6$ is equal to
 - A. 10^{-4}
 - B. 10^3
 - C. 10^8
 - D. 10^{12}

5. Which of the following is true to find the area of a circle:
 - A. Area = πd
 - B. Area = $2\pi r$
 - C. Area = $2\pi r^2$
 - D. Area = πr^2

6. If $3r - 2 = 19$, then " r " is
 - A. 7
 - B. 9
 - C. 12
 - D. 16

7. The angle marked y° is

- A. 45°
- B. 49°
- C. 55°
- D. 60°



8. $-3x - 6 + 7x + 4$ is equal to

- A. $-4x + 2$
- B. $-4x - 2$
- C. $4x - 2$
- D. $4x + 2$

9. The diameter of the Earth is approximately 12700 km. Calculate the circumference to the nearest thousand kilometres. ($\pi = 3.14$)

- A. 20 000 km
- B. 25 000 km
- C. 40 000 km
- D. 80 000 km

10. If a discount on all goods in a store is 30%, how much will a shopper pay for a can of drink priced at \$8.00?

- A. \$2.40
- B. \$5.60
- C. \$10.40
- D. \$13.60

11. The sum of the interior angles of a regular hexagon is

- A. 180°
- B. 360°
- C. 460°
- D. 720°

12. 16.078 correct to three significant figures is:

- A. 16.0
- B. 16.08
- C. 16.1
- D. 17.0

13. 0.00562 written in standard form is

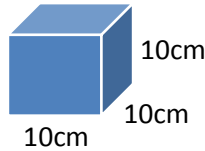
- A. 562×10^{-5}
- B. 5.62×10^{-3}
- C. 5.62×10^3
- D. 56.2×10^4

14. On a map, 10mm represents a length of 1000mm. The scale used is

- A. 1:10
- B. 1:100
- C. 1:1000
- D. 1:10000

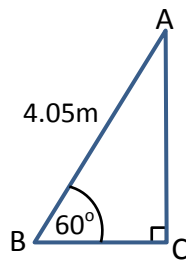
15. What volume of water would be required to fill the cube below?

- A. 1 000 000 cm^3
- B. 1 litre
- C. 10 litres
- D. 1 000 litres



16. Which expression below is used to find the length of AC?

- A. $AC = 4.05m \times \sin 60^\circ$
- B. $AC = 4.05m \times \cos 60^\circ$
- C. $AC = 4.05m \times \tan 60^\circ$
- D. $AC = 4.05m \times \sin 30^\circ$



17. In Form 2 Green, the ratio of boys to girls is 6:4, if there are 40 students altogether, the ratio of girls to the total number of students is

- A. 2:5
- B. 5:1
- C. 16:24
- D. 24:16

18. If $x = 5$, then the value of " y " in $8x - 7y = -2$

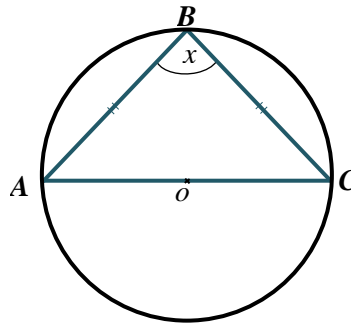
- A. 5
- B. 6
- C. 7
- D. 8

19. Which of the solid shapes named below has the following properties;
3 rectangular and 2 triangular faces;
6 vertices;
9 edges.

- A. Triangular pyramid
- B. Triangular prism
- C. Rectangular prism
- D. Square pyramid

20. In the diagram 'O' is the centre of the circle. In triangle ABC, $AB = BC$.
The measure of the angle 'x' is

- A. 45°
- B. 60°
- C. 90°
- D. 120°



SECTION B: SHORT ANSWERS QUESTIONS (40 MARKS)

SHOW YOUR WORKING AND WRITE THE ANSWER ON THE SPACES PROVIDED. ALL QUESTIONS ARE WORTH 2 MARKS EACH.

21. Evaluate $(5^{-1/2})^4$

$$(5^{-1/2})^4 = \underline{\hspace{2cm}} \quad (2 \text{ marks})$$

22. Calculate the square root of 80,000.

$$\text{Answer} = \underline{\hspace{2cm}} \quad (2 \text{ marks})$$

23. Solve for x in the equation $4x + 12 = 0$

$$x = \underline{\hspace{2cm}} \quad (2 \text{ marks})$$

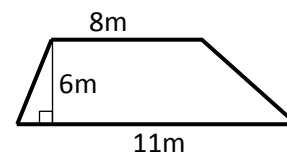
24. Write 0.00056 in standard form

Answer = _____
(2 marks)

25. How much flour will a bakery need to make 50 cakes if 400g is used for each cake? (Answer in kilograms)

Answer = _____
(2 marks)

26. Calculate the area of the trapezium shown



Area = _____
(3 marks)

-
27. 80 tomato seeds are planted. The ratio of the number that germinates to the number that does not germinate is 7:13. How many seeds did germinate?

Germinated seeds = _____
(2 marks)

28. 4 men can do a job in 8 days. **How many days** will it take 16 men to complete the same job?

Answer = _____
(2 marks)

29. Jillian had a salary of \$7,150.00 last year. Calculate her new salary for this year, which **increased** by 4%.

New salary = \$ _____
(2 marks)

-
30. Calculate the **simple interest** charged on a loan of \$25,000.00 at 9% per annum for 5 years.

Simple interest = \$ _____
(2 marks)

31. Rearrange these numbers in order starting with the **largest value**

$$2\frac{1}{2}\%, \frac{9}{20}, 1, 0.35$$

Answer = _____, _____, _____, _____
(2 marks)

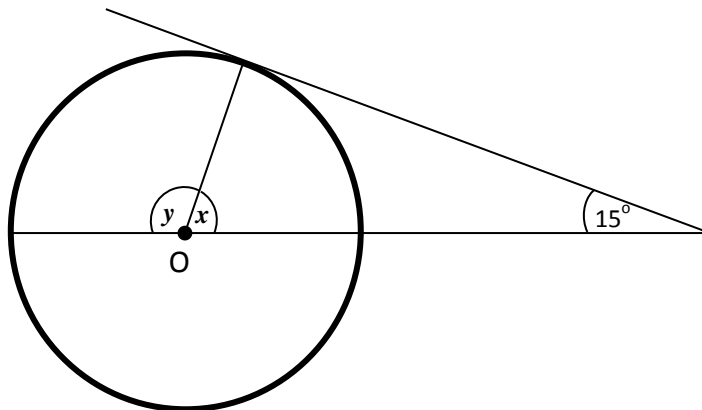
32. Solve for **y** in the equation $3y - 4 = 2y - 1$

Value of **y** = _____
(2 marks)

-
33. By travelling at 200 km/hr, Solomon Airlines takes 35 minutes to fly from Balalae to Gizo. At what **speed** should it travel to complete the journey in 20 minutes?

Speed = _____
(3 marks)

34. In the figure below, 'O' is the centre of the circle.

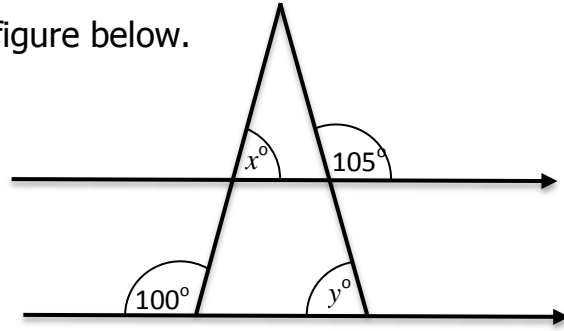


Calculate the size **of angles 'x' and 'y'**:

Angle **x** = _____
(2 marks)

Angle **y** = _____
(2 marks)

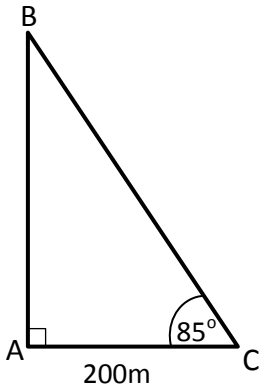
35. Find the **lettered angles** in the figure below.



$x =$ _____
(1 marks)

$y =$ _____
(1 marks)

36. In a triangle ABC, angle BAC is a right angle and angle ACB is 85° . The length of AC is 200 meters. Calculate **AB**.



Length of **AB** = _____
(2 marks)

-
37. In a class of 36 students,
10 came from Malaita
6 from Guadalcanal
8 from Choiseul
4 from Makira
3 from Renbel and
5 from Isabel.

If this information to be drawn on a pie chart;

(a) Calculate the size of the **angle** for students who came from:

i) Isabel

Size of the angle = _____
(1 mark)

ii) Choiseul

Size of the angle = _____
(1 mark)

(b) Calculate the **percentage** of students who came from Renbel

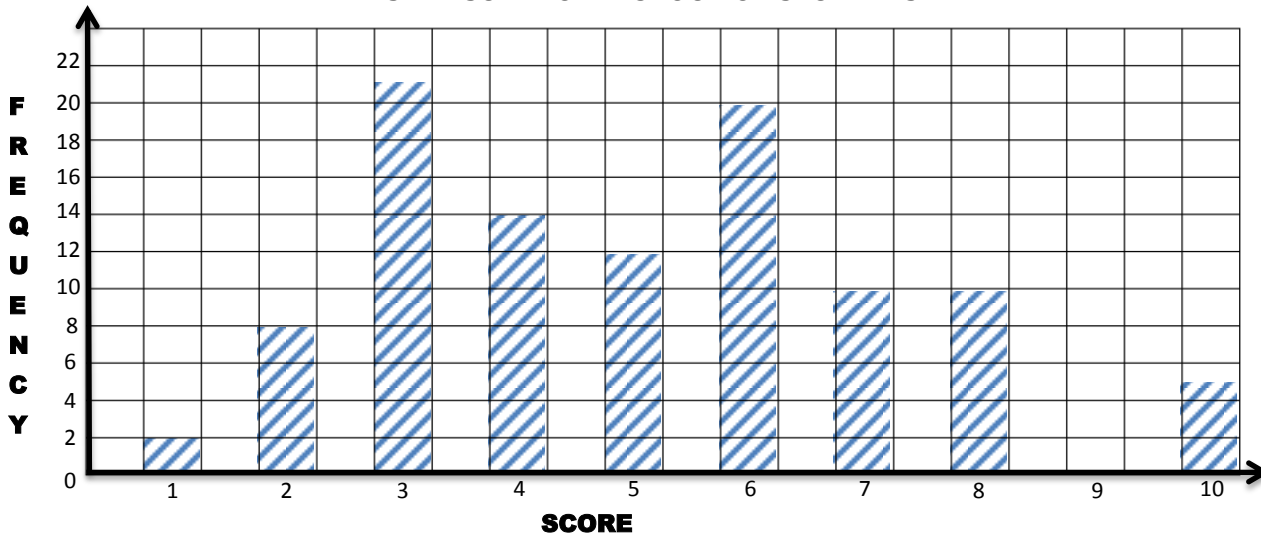
Answer (b) = _____
(2 marks)

SECTION C: LONG ANSWER QUESTIONS (40 MARKS)

SHOW YOUR WORKING AND WRITE THE ANSWER IN THE SPACE PROVIDED.

38.

MATH TEST RESULT FOR A GROUP OF STUDENTS



(a) Which mark is the MOST frequent score?

Most frequent score = _____
(1 mark)

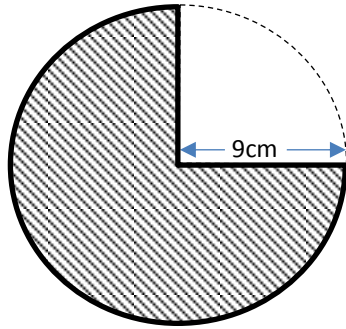
(b) How many students scored **less than 5**?

N^o of Students = _____
(2 marks)

(c) Why there is no graph for score 9?

Ans = _____
(2 marks)

39. The figure shaded is a three-quarter of a circle whose radius is 9 cm.



Use $\pi = 3.1$ to calculate for:

(a) the **arc length** of the shaded region

Arc length = _____ cm
(2 marks)

(b) the perimeter of the circle

Perimeter = _____ cm
(2 marks)

(c) the shaded area of the sector:

Area of sector = _____ cm²
(2 marks)

40. For this straight line equation $y = -3x + 5$:

(a) Find its gradient

Gradient = _____
(2 marks)

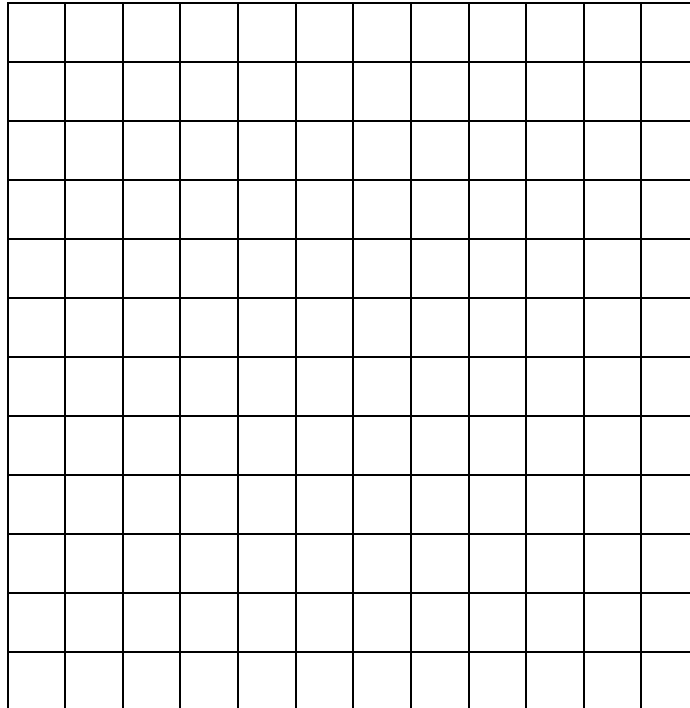
(b) Calculate for *y-Intercept* when $x = 0$:

y-Intercept = _____
(2 marks)

(c) Calculate for *x-Intercept* when $y = 0$:

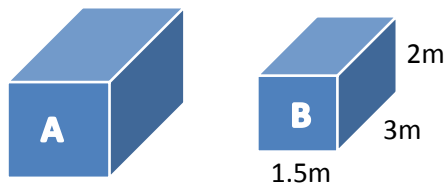
x-Intercept = _____
(2 marks)

(d) Use the grid to plot the graph of $y = -3x + 5$



(3 marks)

41. The dimensions of cuboid **A** are twice those of cuboid **B**. The ratio of the volume of **B** to volume of **A** in simplest form is



(a) Calculate for the volume of cuboid **B**

Volume of cuboid **B** = _____ m^3
(2 marks)

(b) Calculate for the volume of cuboid **A**

$$\text{Volume of cuboid } \mathbf{A} = \underline{\hspace{2cm}} \text{m}^3$$

(2 marks)

(c) What is the ratio of the volume of cuboid **B** to the volume of cuboid **A** in simplest form?

$$\text{Volume of } \mathbf{B} : \text{Volume of } \mathbf{A} = \underline{\hspace{2cm}}$$

(2 marks)

42. Mr. Kalo is a member of Solomon Islands National Provident Fund (SINPF). He has a savings of \$120,000.00 with SINPF. He decided to loan two-thirds of his savings.

(a) Find the amount of money he can loan from NPF:

$$\text{Amount loan} = \underline{\hspace{2cm}}$$

(2 marks)

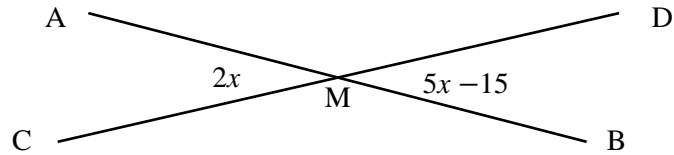
- (b) The NPF charged an interest of 16% per annum. Calculate the interest on the amount borrowed for the period of 5 years.

Interest = _____
(2 marks)

- (c) How much he has to pay altogether after 5 years?

Amount to pay after 5 years = _____
(2 marks)

43. Line AB crosses line CD at point M



(a) Find the value of " x "

$$x = \frac{\quad}{(2 \text{ marks})}$$

(b) Find the size of angle BMD:

$$\text{Angle BMD} = \frac{\quad}{(2 \text{ marks})}$$

The End

SIY9 - MATHEMATICS 2017

CENTRE NUMBER			CANDIDATE NUMBER				
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ANSWER SHEET - MULTIPLE CHOICE
 You are to write the letter of the correct answer only

1	<input type="text"/>	11	<input type="text"/>
2	<input type="text"/>	12	<input type="text"/>
3	<input type="text"/>	13	<input type="text"/>
4	<input type="text"/>	14	<input type="text"/>
5	<input type="text"/>	15	<input type="text"/>
6	<input type="text"/>	16	<input type="text"/>
7	<input type="text"/>	17	<input type="text"/>
8	<input type="text"/>	18	<input type="text"/>
9	<input type="text"/>	19	<input type="text"/>
10	<input type="text"/>	20	<input type="text"/>

FOR MARKER USE ONLY

SECTION	MARKS	SCORE
A	20	
B	40	
C	40	
TOTAL	100	
Marker's Initial		