02

Centre Number	Candidate Number

MINISTRY OF EDUCATION AND HUMAN RESOURCE DEVELOPMENT

SOLOMON ISLANDS YEAR 9 EXAMINATION

2020

MATHEMATICS

WEDNESDAY 11th NOVEMBER 9.00AM **TIME: 2 Hours Plus 10 Minutes Reading Time**

SECTION	CONTENT	MARKS
A	Multiple Choice Questions	20
B	Short Answer Questions	38
C	Long Answer Questions	20
	TOTAL	**78**

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 of this page** and **at the end of this booklet**.
3. Before you answer the questions, read through the instructions carefully.
4. Write your best answers to section A in the boxes provided at the end of this booklet.
5. Write your answers to sections B and C in the spaces provided in this Booklet.
6. Show all your workings for Sections B and C. You may lose some marks if you do NOT show your working.
7. Calculators should NOT be used.
8. Do NOT use correction fluid.
9. Mobile phones are NOT allowed in the Examination room.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

THIS BOOKLET SHOULD CONTAIN 18 NUMBERED PAGES.

SECTION A: MULTIPLE CHOICE (20 MARKS)

WRITE THE LETTER OF THE MOST CORRECT ANSWER IN THE BOXES PROVIDED AT THE END OF THIS BOOKLET.

1. If $x = 6$ and $y = 9$, the value of xy is equal to:

   A. 3
   B. 15
   C. 45
   D. 54

2. The number 0.000 005 76 written in standard form is 5.76×10^{m}, where *m* is a:

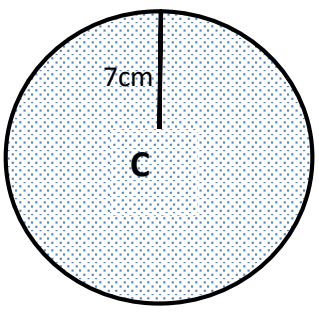
   A. zero power
   B. positive power
   C. negative power
   D. fraction power

3. In a class of 30 students, $\frac{3}{5}$ of the class are boys and $\frac{2}{5}$ are girls. The ratio of girls to boys in its simplest form is,

   A. 2 : 3
   B. 3 : 2
   C. $12:18$
   D. $18:12$

4. What is the circumference of the circle with radius 7cm?
   (Use $\pi = \frac{22}{7}$).

   A. 7 cm
   B. 11 cm
   C. 22 cm
   D. 44 cm



5. The expansion form of the expression $ab\ (a-b)$ equals;

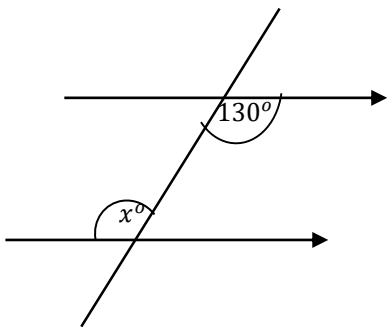
A. $a-b$

B. $a - ab^2$

C. $ab - b^2$

D. $a^2b - ab^2$

6. What is the relationship between angle $\boldsymbol{x}$ and 130° in the diagram below?



A. alternate angles

B. co − interior angles

C. corresponding angles

D. vertically opposite angles

7. To find the solution for $\frac{3}{4} + \frac{6}{8} \div \frac{3}{4}$, three steps are to be considered. Which of the following operations will NOT give the correct answer?

A. add, divide, simplify.
B. simplify, divide, add.
C. divide, simplify, add.
D. divide, add, simplify.

8. 0.672km when converted to metres is equal to:

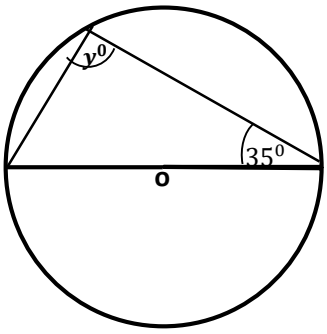
A. 672m

B. 6 720m

C. 67 200m

D. 672 000m

9. What is the size of angle $\boldsymbol{y}$ given in the diagram?



A. 35^o

B. 55^o

C. 65^o

D. 90^o

10. The gradient of the linear equation $\boldsymbol{3y} = \boldsymbol{2x} + \boldsymbol{12}$ is:

A. 2

B. -2

C. $\frac{2}{3}$

D. $-\frac{2}{3}$

11. Which of the following statements is TRUE for all types of triangles?

A. 3 sides, 3 angles, 3 vertices, 3 line segments, sum of interior angles 180^o

B. 3 sides, 1 angle equal 90^o, 3 vertices, 3 line segments, sum of interior angles 180^o

C. 2 equal sides, 2 equal angles, 3 vertices, 3 line segments, sum of interior angles 180^o

D. 3 equal sides, 3 equal angles, 3 vertices, 3 line segments, sum of interior angles 180^o

12. Robert, Roger and Joseph shared $240.00 in the ratio 2:3:1. How much will the biggest share?

A. $40.00

B. $80.00

C. $120.00

D. $240.00

13. If I=PRT, what is the value of T when P= \$60 000.00, I=\$3 000.00, and R=15% p.a.

A. 4 years
B. 40 years
C. 4 months
D. 40 months

14. $10xa^9 + 2ya^4$ When completely factorized is equal to;

A. $2a^4(5xa^5 + ya)$
B. $2a^4(5xa^5 + y)$
C. $2a^4(5xa^9 + y)$
D. $2(5xa^5 + ya^4)$

15. In translation, moving 3 units up and then moving 5 units to the left can be described as;

A. $\binom{3}{5}$
B. $\binom{-3}{-5}$
C. $\binom{3}{-5}$
D. $\binom{-3}{5}$

16. The **mean** of this set of data: 2, 5, 3, 1, 8, 6 is: *(Answer to 2 decimal places).*

A. 4.10
B. 4.16
C. 4.17
D. 4.20

17. If 5 bags of rice cost \$750.00. How much would 15 bags of rice cost?

A. \$ 75.00
B. \$ 2 250.00
C. \$ 3 750.00
D. \$11 250.00

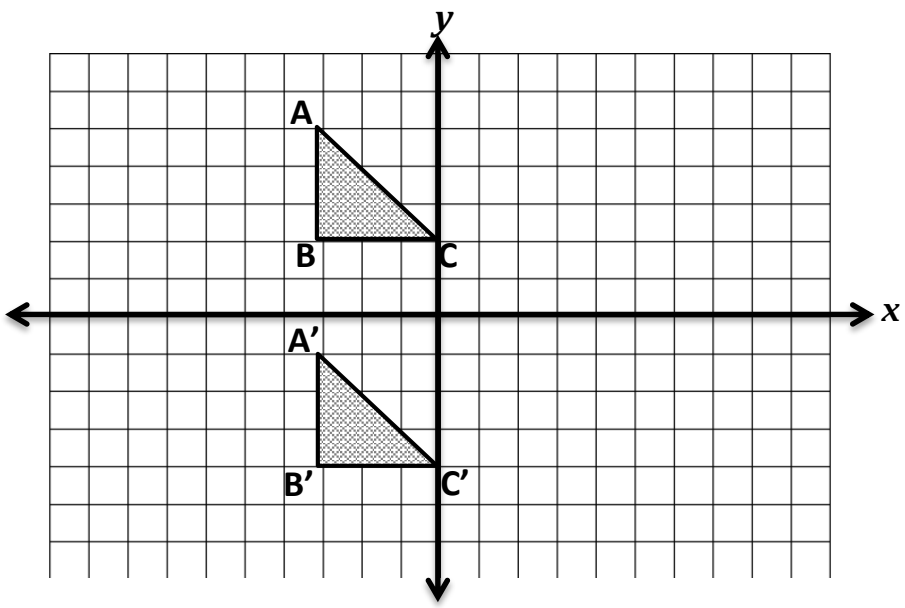
18. If 7.5m is a true distance represented by 1.5cm on the map. The scale on this map is;

A. 1 : 500
B. 1 : 5 000
C. 1 : 50 000
D. 1 : 500 000

19. The value of $\sqrt{0.81}$ is;

A. 9.0
B. 0.9
C. 0.09
D. 0.0009

20. Triangle A'B'C' is the image of triangle ABC under the translation described by which vector? Each square is one unit.



A. $\begin{pmatrix} 0 \\ -6 \end{pmatrix}$

B. $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$

C. $\begin{pmatrix} 0 \\ 6 \end{pmatrix}$

D. $\begin{pmatrix} -6 \\ 0 \end{pmatrix}$

Total marks for Section A: ____/20

SECTION B: SHORT ANSWERS QUESTIONS (38 MARKS)

SHOW ALL YOUR WORKING OUTS AND WRITE THE ANSWERS IN THE SPACES PROVIDED. ALL QUESTIONS ARE WORTH 2 MARKS EACH.

21. Factorise and simplify $\frac{x^2+x}{2x^2}$

_____

(2 marks)

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22. If $x = 9 + 2y$ and $x + y = 18$, find the value of y.

y = _____

(2 marks)

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23. Carlos bought a car for $45 000.00. Six months later he sold it at $30 000.00. Calculate the percentage loss he sold the car at.

% loss = _____

(2 marks)

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24. John shared his NPF savings among his two children, in the ratio $1\frac{1}{2} : 2\frac{1}{4}$
Express the ratio in its simplest form.

$1\frac{1}{2} : 2\frac{1}{4}$ = _____

(2 marks)

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25. Evaluate 24 – 5 (3 + 35 ÷ 7)

Ans = _____

(2 marks)

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26. Ben runs a distance of 15km at an average speed of $11\frac{1}{4}$ km/h. Calculate how many hours and minutes he ran the distance.

Time = _____hr_____mins

(2 marks)

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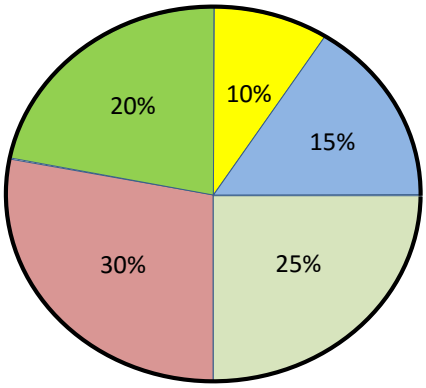
27. The percentage of National Fisheries Development (NFD) Fishing Company's Export Income of skip jack tuna over a period of 5 years (different color) are shown in the pie chart below.



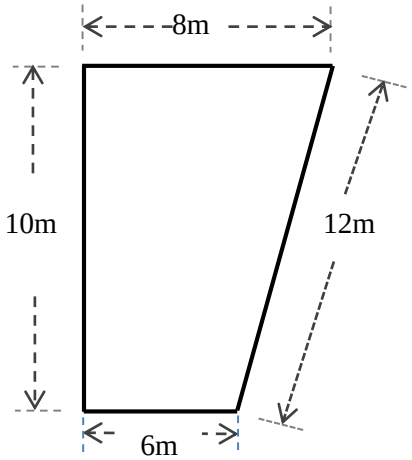
(a) What fraction of the total income was the highest for the five years period? Express the fraction in its simplest form.

Ans = _____
(1 mark)

(b) Calculate for the angle measured (in degrees) for the sector with 25%.

Size of angle for the sector = _____degrees
(1 mark)

28. Find the **area** of the shape below.



Area = _____m^2

(2 marks)

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29. Peter bought two types of biscuits for breakfast. If the number of navy (*N*) biscuits is *seven-times* the number of butter (*B*) biscuits, write the equation for the statement.

Equation = _____

(2 marks)

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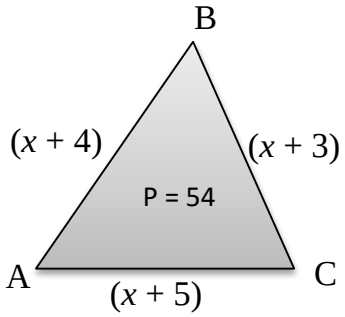
30. Given the Perimeter of triangle ABC is 54cm. Find the value of ***x*.**



x = _____

(2 marks)

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31. Paul invests $2 000.00 at Pan Oceanic Bank (POB) at an interest rate of 3.5% p.a. Calculate how much interest should he receive after 3 years.

Interest = _____

(2 marks)

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32. A volleyball match lasted for 75 minutes finished at 3:45pm. At what time did this match begin?

Starting time = _____

(2 marks)

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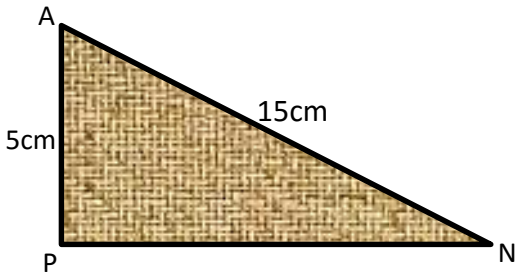
33. Use **Pythagoras rule** to find the length of PN. *(Round to the nearest whole number)*.



PN = _____

(2 marks)

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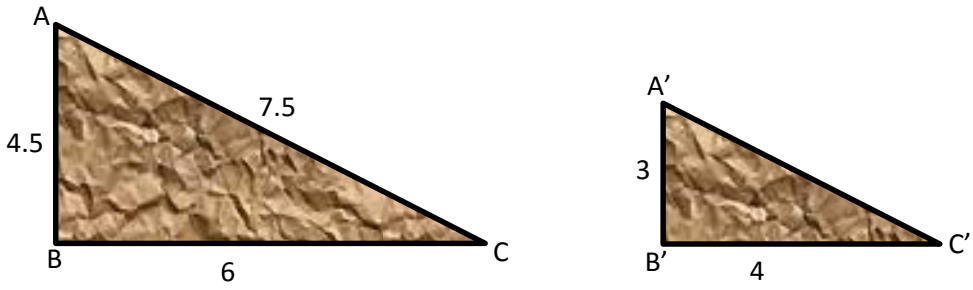
34. Triangle ABC is reduced to A'B'C'. Find the length of A'C'.



A' C' = _____

(2 marks)

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35. Jack ate an average of 4 mangoes in 6 days. If he ate 20 mangoes in the first 5 days, how many mangoes did he eat on the sixth day?

Number of mango on 6^{th} day= _____

(2 marks)

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36. In the triangle ABC, angle B = 90° and side BC = 6m. If the area of triangle ABC is $21m^2$, calculate the height of side AB.

Height = _____

(2 marks)

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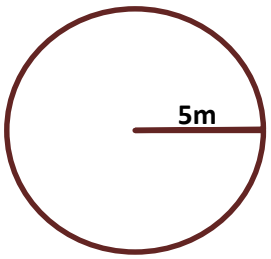
37. Calculate the **circumference** of the given circle, (use π = 3.14). *(Answer correct to 1 decimal place).*



Circumference = _____ m

(2 marks)

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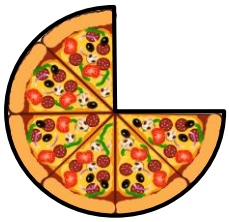
38. A pizza with 28cm in diameter is cut into sectors. If *one-quarter* is eaten, calculate the area of remaining sectors of the pizza. **Use $\pi = \frac{22}{7}$.**



Area = _____cm^2

(2 marks)

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39. If the normal body temperature is 37°C, using the formula $°F = \frac{°C \times 9}{5} + 32$, calculate the temperature in Fahrenheit.

37°C = _____°F

(2 marks)

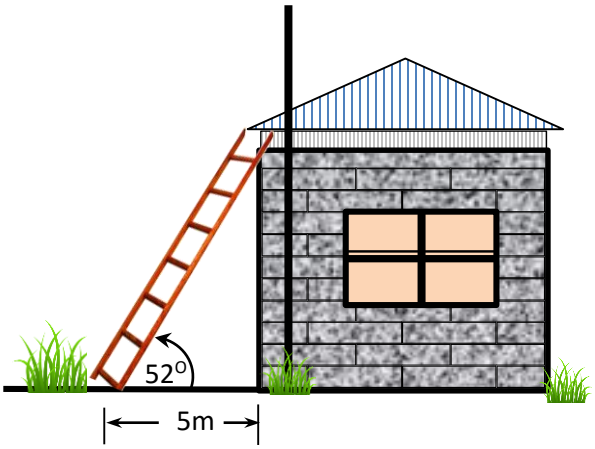
Total marks for Section B: **38**

SECTION C: **LONG ANSWER QUESTIONS** **(20 MARKS)**

SHOW YOUR WORKING AND WRITE THE ANSWER IN THE SPACE PROVIDED. EACH QUESTION IS WORTH 4 MARKS EACH.

40. A ladder leans against the building and makes an angle of 52^{o} with the ground. The foot of the ladder is 5 metres from the base of the building. *(See diagram below).*

(NB: *Sin* 52° = 0.8, *Cos* 52° = 0.6, *Tan* 52° = 1.3)



a) Calculate the length of the ladder. *(Answer* to *the nearest whole number)*.

Length of the ladder = _____ m

(2 marks)

b) How far up the wall does the ladder reach? *(Answer correct to the nearest metre)*.

Height of the wall = _____ m

(2 marks)

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41. A Twin-Otter travels at 200km/h, and it takes 35 minutes to fly from Honiara to Auki.

    (a) Calculate the distance (*in km*) between Honiara and Auki.

Honiara to Auki = _____km
(2 marks)

    (b) How many minutes will it take to travel at 351km/h to cover the distance in question (a) above?

Time in minutes = _____
(2 marks)

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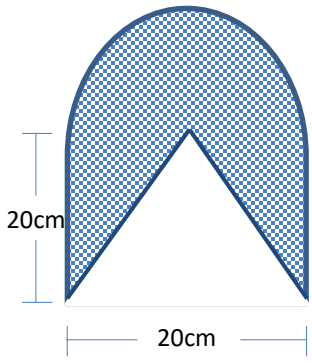
42. The figure below consists of a semicircle, and triangles. Calculate the area of the **shaded region**.
Use π = 3.1, (Hint: *area of circle* = πr^2, *area of triangle* = *½bh*)



Area shaded = _____ cm^2
(4 marks)

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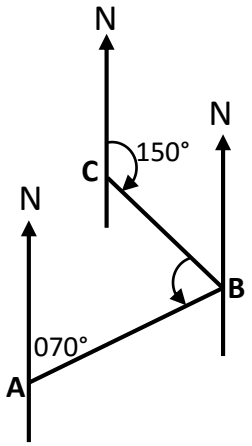
43. In the given diagram, the bearing of B from A is 070°.



(a) What is the bearing of A from B?

Bearing of A from B =_____

(2 marks)

(b) What is the bearing of C to B?

Bearing of C to B =_____

(2 marks)

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44. A farmer owns 25 hectares of cocoa and 2.25km^2 of kava.
(**Note: 1 hectare = 10 000m^2**)

(a) Express 2.25km^2 in hectares.

2.25km^2= _____ha
(3 marks)

(b) Calculate the total area (in hectares) for which the cocoa and kava are planted.

Total area = _____ha
(1 mark)

Total marks for Section C: 20

SIY9 - MATHEMATICS 2020

CENTRE NUMBER	CANDIDATE NUMBER

ANSWER SHEET - MULTIPLE CHOICE

You are to write the letter of the correct answer. Make sure your answer is put alongside the right question number.

1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	

FOR MARKER AND CHECKER USE ONLY

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A	20		
B	38		
C	20		
TOTAL	78		
Marker and Checker Initials			