



Centre Number	Candidate Number

MINISTRY OF EDUCATION AND HUMAN RESOURCES DEVELOPMENT

# SOLOMON ISLANDS YEAR 9 EXAMINATION 2023

## MATHEMATICS QUESTION AND ANSWER BOOKLET

WEDNESDAY 11<sup>TH</sup> OCTOBER 9:00AM

TIME: 1 HOUR 30 MINUTES  
Plus 10 MINS. READING TIME

<u>SECTION</u>	<u>CONTENT</u>	<u>MARKS</u>
A	Multiple Choice Questions	15
B	Short Answer Questions	40
C	Long Answer Questions	20
<b>Total</b>		<b>75</b>

<b><u>INSTRUCTIONS TO CANDIDATES</u></b>		
<ol style="list-style-type: none"> <li>1. Do not open this booklet until you are told to do so.</li> <li>2. Write both your Centre Number and Candidate Number in the box provided at the top right hand corner of this page and also at the top of page 17 of this booklet.</li> <li>3. Before you answer the questions, read through the instructions carefully.</li> <li>4. Write all your best answers to <u>Section A</u> in the boxes provided at the end of this booklet.</li> <li>5. Write your answers to Sections B and C in the spaces provided in this Booklet.</li> <li>6. Show all your workings for Section B and C. You may lose some marks if you do <u>NOT</u> show your working.</li> <li>7. Calculators can be used.</li> <li>8. Do <u>NOT</u> use correction fluid.</li> <li>9. Mobile phones are <u>NOT</u> allowed in the Examination room.</li> </ol>		
<b>YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.</b>		

**SECTION A:        MULTIPLE CHOICE****(15 MARKS)**

**WRITE THE LETTER OF THE MOST CORRECT ANSWER IN THE BOXES PROVIDED AT THE END OF THIS BOOKLET ON PAGE 17.**

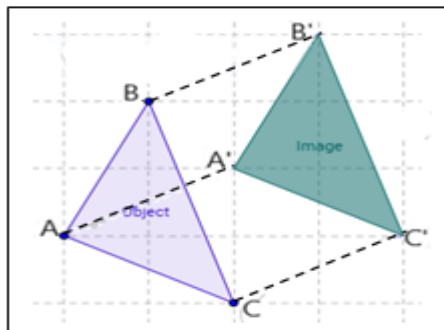
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1. 1 meter (m) = 100 centimeters (cm), therefore, 105 meters (m) changed to centimeters (cm) is equal to:  
  
A. 1 050cm  
B. 10 500cm  
C. 105 000cm  
D. 1 050 000cm
  
2. 1 kilogram (kg) = 1 000 grams (g), therefore, 3 900 000 grams (g) changed to kilograms (kg) is equal to:  
  
A. 39kg  
B. 390kg  
C. 3 900kg  
D. 39 000kg
  
3. Change 0.00048 to standard form:  
  
A.  $4.8 \times 10^{-4}$   
B.  $4.8 \times 10^{-3}$   
C.  $4.8 \times 10^{-2}$   
D.  $4.8 \times 10^{-1}$
  
4. The ratio 15:90 simplified to its simplest form is:  
  
A. 5:30  
B. 3:18  
C. 1:6  
D. 6:1
  
5. It costs James \$480 to buy 6 small bags of rice. How much will it cost him to buy 10 small bags of rice of the same kind?  
  
A. \$80  
B. \$288  
C. \$800  
D. \$2 880

6. Patty bought a bag of rice for \$180. He sold it at a markup of 20%. What is the new selling price?
- A. \$20.  
B. \$36.  
C. \$144.  
D. \$216.
7.  $\left(4^{\frac{1}{2}}\right)^6$  equals to:
- A.  $4^2$   
B.  $4^3$   
C.  $4^4$   
D.  $4^5$
8. The expanded form of the expression:  $4(3x - 2)$  is:
- A.  $12x - 8$   
B.  $12x - 2$   
C.  $7x - 2$   
D.  $7x - 8$
9. The factorized form of the expression:  $3x^3 + 15x$  is:
- A.  $3x(x + 5x)$   
B.  $3x^2(x + 5)$   
C.  $3x(x^2 + 5)$   
D.  $3x^2(x + 5x)$
10. Calculate the value of x in the equation,  $2x + 10 = 4$
- A. -3  
B. -7  
C. 3  
D. 7
11. The equation:  $3x - y + 4 = 0$  changed to  $y = mx + c$  is:
- A.  $y = 3x + 4$   
B.  $y = 3x - 4$   
C.  $y = -3x + 4$   
D.  $y = -3x - 4$

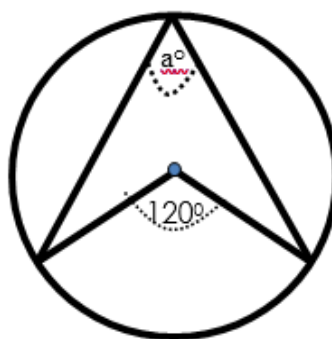
12. The transformation of triangle ABC to A'B'C' is

- A. rotation
- B. reflection
- C. translation
- D. enlargement



13. The size of the missing angle  $a^\circ$  in the diagram below is:

- A.  $60^\circ$
- B.  $90^\circ$
- C.  $120^\circ$
- D.  $240^\circ$



**Use the given data to answer questions 14 and 15.**

**13, 10, 12, 11, 10, 12, 13, 12, 13, 13, 10, 13**

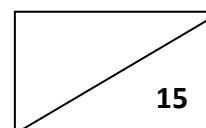
14. The mode is:

- A. 10
- B. 11
- C. 12
- D. 13

15. The median is:

- A. 10
- B. 11
- C. 12
- D. 13

**Total mark for Section A:**



**SECTION B:**      **SHORT ANSWER QUESTIONS**

**(40 MARKS)**

**SHOW ALL YOUR WORKING OUTS AND WRITE YOUR ANSWERS IN THE SPACES PROVIDED.**

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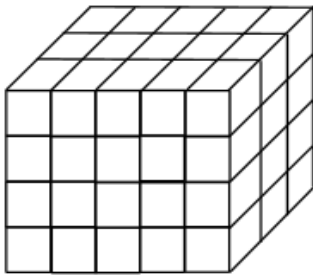
16. Work out the answer for  $\sqrt{64 \times 10^4}$

Answer: \_\_\_\_\_

2 marks

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17. Calculate the number of small cubes that make the volume of the shape below:



Answer: \_\_\_\_\_

2 marks

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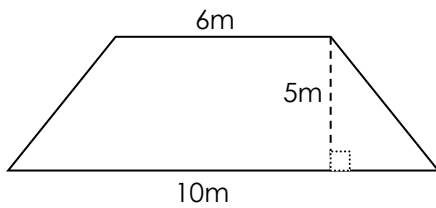
18. A ship left Honiara at 8:00 am and arrived Gizo at 7:15 pm on the same day. Calculate the time taken by the ship to travel from Honiara to Gizo.

Answer: \_\_\_\_\_

2 marks

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19. Calculate the area of the trapezium below.



Answer: \_\_\_\_\_  
2 marks

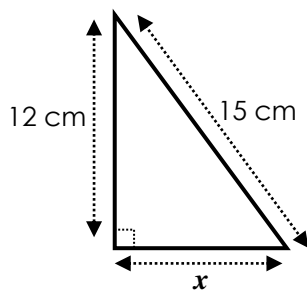
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20. Jack kicks a soccer ball that moves at a speed of 10 meters per second. The ball travels for 1.5 seconds. Calculate the distance travelled by the ball.

Answer: \_\_\_\_\_  
2 marks

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21. Calculate the length of the side marked with letter  $x$  of the right-angled triangle below using the **Pythagoras rule**.



Answer: \_\_\_\_\_  
3 marks

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22. Ray and Ron shared 100 coconut fruits in the ratio 9:11. How many coconut fruits will Ray receive?

Answer: \_\_\_\_\_  
2 marks

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23. Lionel bought a bag of rice that costs \$80, and sold it for \$88. Calculate the percentage markup.

Answer: \_\_\_\_\_  
2 marks

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24. Calculate  $2^0 \times 2^{-2} \times 6^2 \times 3^{-3}$

Answer: \_\_\_\_\_  
3 marks

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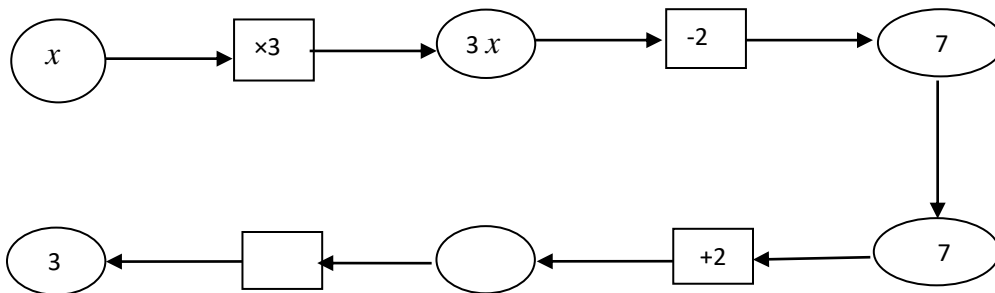
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25. Clement uses 3 buckets to water his garden in 45 minutes. How much time will it take him to water same garden using 9 buckets of the same kind?

Answer: \_\_\_\_\_

2 marks

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26. Using the equation  $3x - 2 = 7$  complete the number machine given below.



Answer: \_\_\_\_\_

2 marks

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27. Simplify the algebraic fraction:  $\frac{5x^4y^2 + 3y^2}{5x^4 + 3}$

Answer: \_\_\_\_\_  
2 marks

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28. Solve for  $x$  in the equation:  $4x + 3 = 9 + 6x$

Answer: \_\_\_\_\_  
2 marks

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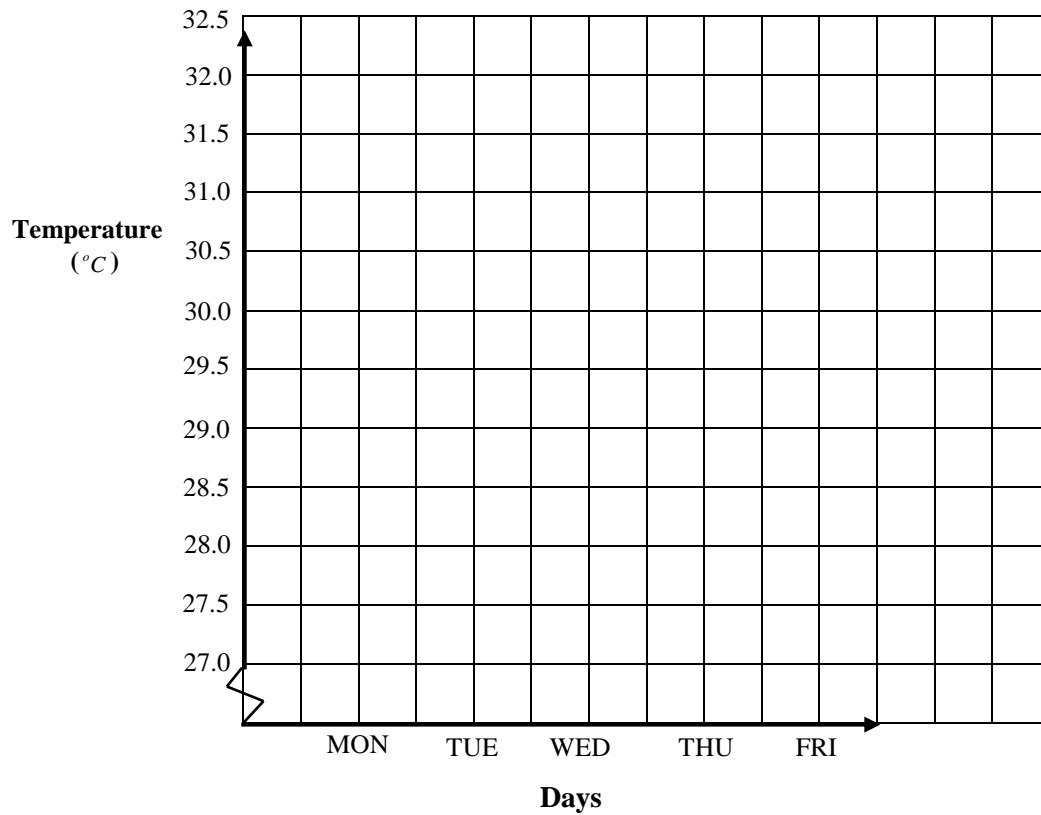
29. Luke's age is two times Ruben's age. The sum of their ages is 21. How old is Ruben?

Answer: \_\_\_\_\_  
2 marks

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30. Use the given grid to plot and draw a line graph that shows the daily temperature in Honiara.

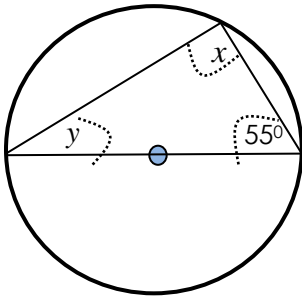
Days	Monday	Tuesday	Wednesday	Thursday	Friday
Temperature	29 <sup>0</sup>	31 <sup>0</sup>	32 <sup>0</sup>	31 <sup>0</sup>	30 <sup>0</sup>



2 marks

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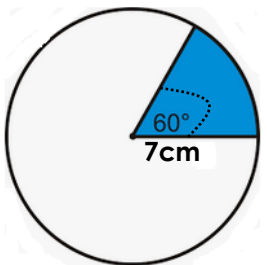
31. Calculate the missing angles marked  $x$  and  $y$  in the diagram below:



Answer: \_\_\_\_\_  
2 marks

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32. Use the formula  $A = \frac{\theta}{360^\circ} \pi r^2$  Calculate the area of the sector shaded blue in the circle given below:  $\pi = \frac{22}{7}$

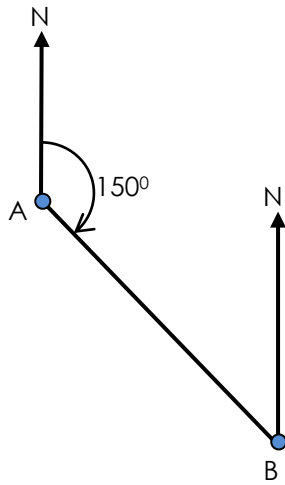


Answer: \_\_\_\_\_  
4 marks

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33. Study the diagram below carefully and answer the question that follow.

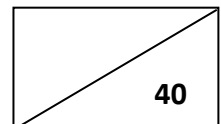


Calculate the bearing of A from B

Answer: \_\_\_\_\_  
(2 marks)

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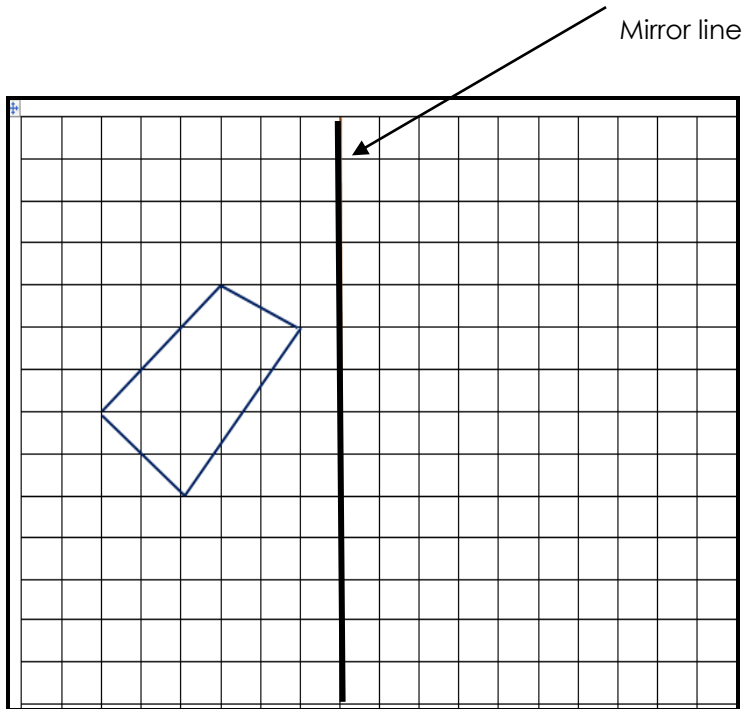
Total mark for Section B:



**SHOW ALL YOUR WORKING OUTS AND WRITE THE ANSWER ON THE SPACES PROVIDED.**

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34. Draw the reflection of the shape using the mirror line shown below.



(3 marks)

35. Pio, Lydia and Maryanne run a business and earned a profit of \$60 000.00. They then, shared the profit in the ratio **6: 5: 4** respectively.

- a. Calculate how much did Pio earned from the profit?

How much \_\_\_\_\_  
(2 marks)

- b. What percentage of the profit did Lydia earned to one decimal place?

Answer: \_\_\_\_\_  
(2 marks)

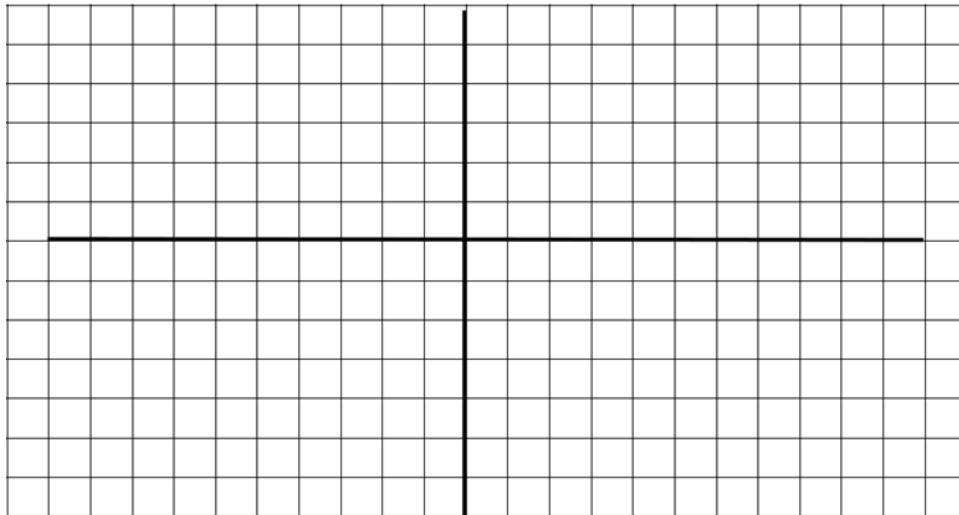
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36.  $y = \frac{1}{2}x + 5$  is a linear equation.

- a. What is the gradient? (1 mark)

- b. What is the y-intercept? (1 mark)

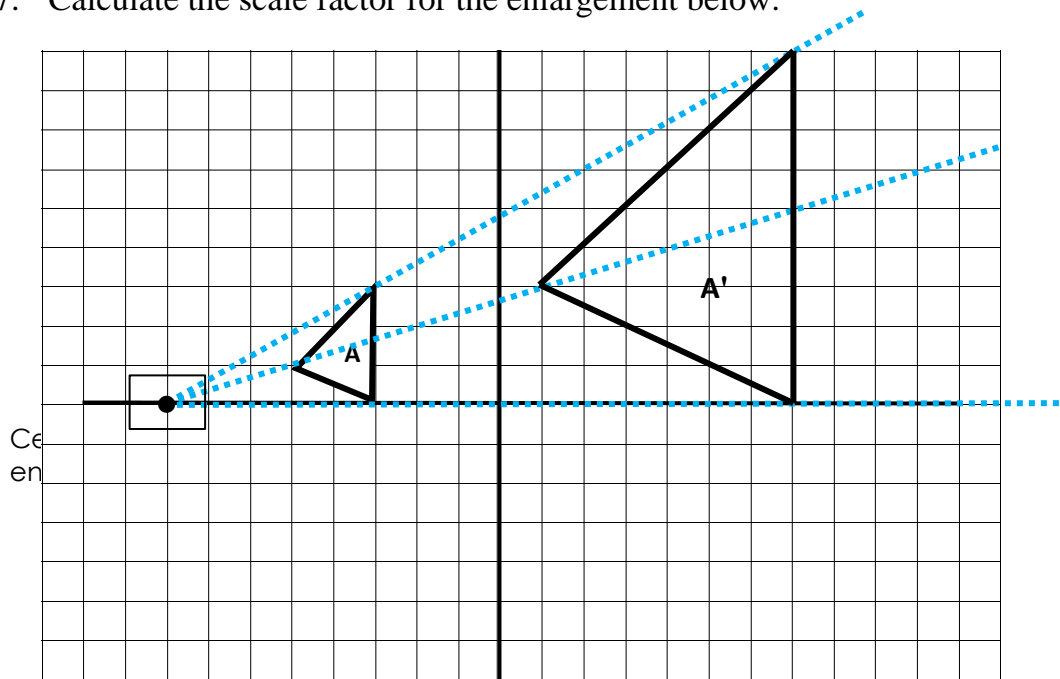
- c. Using the gradient and intercept method to graph  $y = \frac{1}{2}x + 5$  in the grid provided below.



(2 marks)

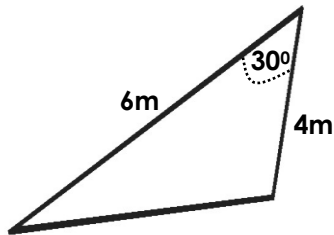
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37. Calculate the scale factor for the enlargement below.



(2 marks)

38. Calculate the area triangle shown below using the formula  $A = \frac{1}{2}ab \sin C$   
where,  $\sin 30^\circ = 0.5$



(3 marks)

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39. For the set of given numbers below:

**1, 1, 2, 2, 2, 3, 2, 3, 3, 3, 3, 4, 3, 4, 4, 5, 5, 6, 6, 6**

a) Find the **range** for the set of data above

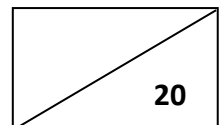
Answer: \_\_\_\_\_  
(2 marks)

b) Calculate the **mean** for the data given above.

Answer: \_\_\_\_\_  
(2 marks)

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Total mark for Section C:





## SIY9 - MATHEMATICS 2023

CENTRE NUMBER

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CANDIDATE NUMBER

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### 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	<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"/>		
7	<input type="text"/>		
8	<input type="text"/>		
9	<input type="text"/>		
10	<input type="text"/>		

### FOR MARKER AND CHECKER USE ONLY

SECTIONS	MARKS	MARKER	CHECKER
A	15		
B	40		
C	20		
TOTAL	75		
Marker/Checker Initials			