

## GAUTENG DEPARTMENT OF EDUCATION

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| **LEARNER’S NAME & SURNAME** | **:** |  |
| **SUBJECT** | **:** | **MATHEMATICS** |
| **GRADE** | **:** | **9** |
| **TASK** | **:** | **TERM 3 TEST** |
| **MARKS** | **:** | **50** |
| **DURATION** | **:** | **1 HOUR** |

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**INSTRUCTIONS AND INFORMATION**

Read the following instructions carefully before answering the questions.

1. Answer ALL the questions.
2. Number the answers correctly according to the numbering system used in this question paper
3. Clearly show ALL calculations which you have used in determining your answers where required.
4. Round off all final answers to two decimal places where it is required unless stated otherwise.
5. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
6. Answers only will not necessarily be awarded full marks.
7. Note that diagrams are not necessarily drawn to scale.

8. Write neatly and legibly.

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| **QUESTION** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | **TOTAL** |
| **CONTENT** | Multiple content | Functions and relationships | Functions and relationships | Functions and relationships | Functions and relationships | Geometry of straight lines | Geometry of 2D shapes | Transformation geometry |  |
| **MARK ALLOCATED** | *10* | *3* | *6* | *4* | *5* | *6* | *4* | *12* | **50** |
| **LEARNERS’ MARK** |  |  |  |  |  |  |  |  |  |

Question 1

Circle the correct answer.

1.1. In the output value is\_\_\_\_\_\_\_\_\_\_\_\_\_

A. 3

B.

C.

D.

1.2. Match the graph to the table that has the values of the graph

Y

X

. -1

A.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input (x) | 2 | 4 | 5 | 8 | 15 | 50 |
| Output (y) | 8 | 12 | 14 | 20 | 34 | 104 |

B.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input (x) | -3 | 0 | 2 | 9 | 11 | 20 |
| Output (y) | 8 | -1 | 3 | 80 | 120 | 399 |

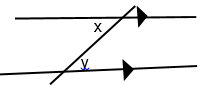
C.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input (x) | -3 | 0 | 3 | 6 | 9 | 12 |
| Output (y) | 4 | 2 | 0 | -2 | -4 | -6 |

D.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input (x) | 1 | 2 | 3 | 4 | 6 | 12 |
| Output (y) | 12 | 6 | 4 | 3 | 2 | 1 |

1.3. On the diagram below; angle x and angle y are equal because they are \_\_\_\_\_\_\_\_\_\_



A. Corresponding angles.

B. Co – interior angles

C. .Alternate angles.

D. Complementary angles

1.4. Two lines that intersect at are \_\_\_\_\_\_\_\_\_\_\_\_\_\_

A. Parallel lines.

B. Straight lines.

C. Vertical lines.

D. Perpendicular lines.

1.5 A function which has a constant difference is \_\_\_\_\_\_\_\_\_\_

A. Exponential.

B. Linear.

C. Logarithm.

D. None of the above.

1.6 In

A.Y is the independent value

B. Y is the dependent value

C. Y is the input value

D.All of the above

1.7 The gradient is \_\_\_\_\_\_\_\_\_

A.

B.

C.

D.

1.8. One of the properties of an Isosceles triangle is that \_\_\_\_\_\_\_\_\_

A.All angles add up to and all sides are not equal.

B. All angles add up to and all sides are equal.

C. The sum of angles equals and it has a right angle.

D.The base angles are equal and opposite sides are equal.

1.9. Complementary angles add up to \_\_\_\_\_\_\_\_\_

A.

B.

C.

D.

1.10. A continuous graph that follows a curved pattern is a \_\_\_\_\_\_\_\_\_

A. Non-linear graph

B. Straight graph

C. Discrete graph

D.Increasing graph [10]

QUESTION 2.

Determine the missing input and output values in the following flow chart and fill in the table.

X Y

b)\_\_\_\_

7

c)\_\_\_\_

-2

a)\_\_\_

2

y = ½ *X + 7*

[3]

Question 3

Determine the input values for **y = x – 1**; if the output values are the integers from -3 to 1 and answer this by filling the table below.

|  |  |  |  |  |  |
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[6]

Question 4

Describe the relationship between x and y from the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| x | -2 | -1 | 0 |
| y | 9 | 5 | 1 |

4.1. Describe in words: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

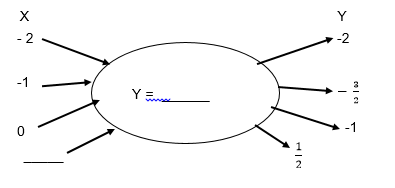
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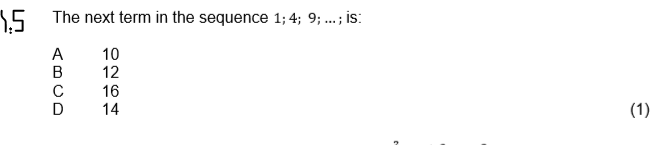
4.2. Describe algebraically : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2)

[4]

Question 5

Determine the rule that relates the input to the output values.





5.1. Write the rule algebraically: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (2)

5.2. Use the rule to calculate the missing value. Write in the space below to show calculations.

(3)

[5]

Question 6

WXYZ is a parallelogram with = 90 and Calculate with reasons the sizes of ; and

W Z

²

¹

²

¹ Ꝫ

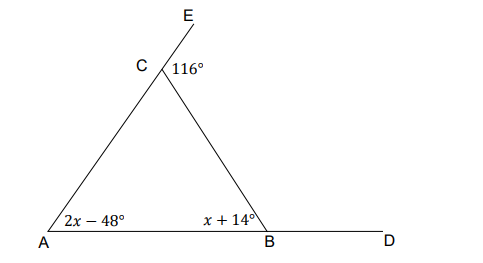
X Y V

[6]

|  |  |
| --- | --- |
| Statement | Reason |
|  |  |

Question 7

In the diagram below, = . Calculate the value of and give reasons for your answers.



|  |  |
| --- | --- |
| Statement | Reason |
|  |  |

[4]

Question 8.

Use the Cartesian plane to respond to the statements below.

8.1 Draw ABC with coordinates of A (-4;5) , B(-6;3) C(-2;3). (3)

8.2. Indicate the coordinates of A¹B¹ and C¹ show calculations below

Coordinates of A’ : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Coordinates of B’ : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Coordinates of C’ : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (6)

8.3. Draw the image of ABC; i.e. A’B’C’ if ABC is translated using the

rule (x; y) (x+3; y - 2). (3)

Y

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X

[12]