**MATHEMATICS**

**TERM 3 TASK 1 (PROJECT)**

**EXAMINER(S) : PLC EDUCATORS**

**MODERATOR(S) : MS F. OOSTHUIZEN/ MR M. MAWILA**

**LEARNER’S NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**GRADE :7\_\_\_**

**DURATION : 3 DAYS**

**DATE : \_\_\_ AUGUST 2023**

**MARKS : \_\_\_\_\_ %**

As part of the grade 7 project for term 3, you will be creating a 2-D Geometric map for an Estate using the knowledge of your Maths concepts. Your design must be presented on a white A3 cardboard paper. You may draw or paste “cut out drawings”. All drawings must be done using a ruler, pencil, a protractor and a compass when need be. Your design must include all the below geometric figures and your creativity to make your Estate inviting and homey. Include features that will make your Estate the number 1 kid friendly place to stay at in Johannesburg.

MATERIALS REQUIRED:

* 1 white cardboards paper (should be A3 size)
* Protractor
* Compass
* Pencil, eraser, blue pen and ruler.
* Glue (optional)
* Scissors(optional)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question** | **1** | | | | **2** | **3** | **4** | **Total** |
| **Section** | **A** | **B** | **C** | **D** |  |  |  |  |
| **Topics** | **Construction of Geometric figures.** | **Combined topics: Fractions, Patterns and**  **circles.** | **Types of triangles** | **Creativity, neatness and presentation** | **Parts of a circle** | **Whole numbers and decimal fractions** | **Numeric and geometric patterns** |  |
| **Total Marks** | **113** | **7** | **8** | **6** | **5** | **8** | **3** | **50** |
| **Learner Marks** |  |  |  |  |  |  |  |  |

**INSTRUCTIONS**

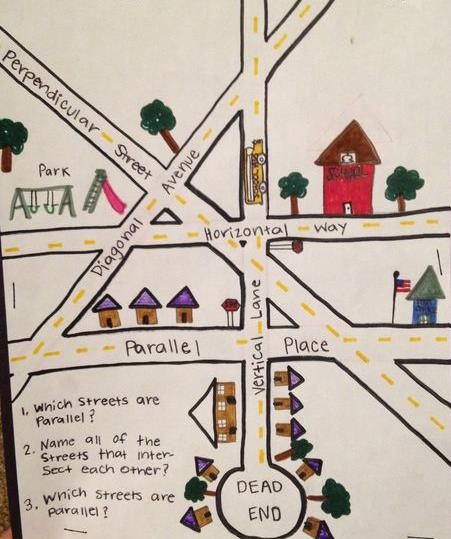
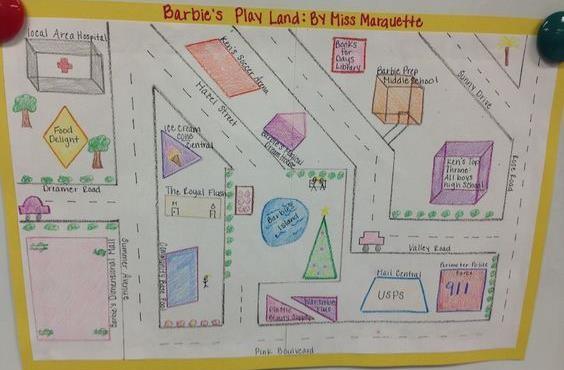
* Learners will work in groups of 5 or 6.
* Each learner must participate in the group.
* Each group member must bring materials to class.
* The group members must work together to design/draw and complete the project.
* After the design has been made, the group must measure the geometric figures again to ensure they used the correct measurements and all instruction have been followed.

|  |  |
| --- | --- |
| **SURNAME** | **NAME** |
| 1. |  |
| 2. |  |
| 3. |  |
| 4. |  |
| 5. |  |
| 6. |  |

**GROUP MEMBERS NAMES**

**Question 1**

Use the pictures below to help you design the Estate Complex and follow the steps that follow.



### Section A: Street design [Total marks: 13]

1. Draw streets that are parallel to each other. Ensure there are at least two pairs of parallel streets included in your design. Name the two pairs of streets parallel to each other. (4)

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1. Draw streets that are perpendicular to each other. Have at least one pair of perpendicular streets in your design. Name the two-perpendicular lines. (2)

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1. Draw 3 street intersections, the intersecting streets must intersect at the following angle measurements:
   1. Angle A: 60 degrees and colour this angle green.
   2. Angle B: 90 degrees and colour this angle blue.
   3. Angle C: 120 degrees and colour this angle red.

Provide accurate measurements and construct the intersection accordingly. (6)

1. Include a dead end at the end of one of the streets. The dead end should be in a circular form with a diameter of 5cm. Show the centre point and construct the dead end accordingly. (1)

### Section B: Play area Design. [Total marks: 7]

In separate and safe part of your Estate complex, design a play area that includes the following:

1. Draw a merry-go round with a radius of 2cm. (1)
2. Hopscotch counting in eighths from 1/8 up to 1 whole. Remember to simplify your fractions. (2)
3. Design a pathway in the play area using a numeric and geometric pattern of your choice. Describe the pattern and provide the next three elements in the sequence. (3)

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1. Add any other play area item you can find in an outdoor play area. Design the item using any geometric figure. (1)

### Section C: Buildings [Total marks: 8]

1. Use different types of triangles to show a library, ice-cream shop, houses, swimming pool, police station, hospital and a shopping centre. Make sure all buildings are labelled.

* The library and ice-cream shop must be in the shape of an equilateral triangle. (2)
  + The police station and houses must be in the shape of a right-angle triangle. (2)
  + The shopping centre and hospital must be in the shape of an isosceles triangle.(2)
  + The swimming pool must be in the shape of any quadrilateral. (2)

### Section D: Creativity, presentation and neatness. [Total marks: 6]

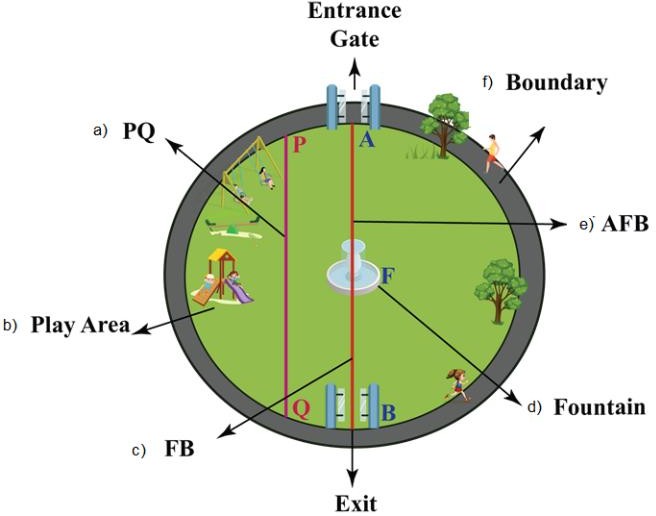
1. Add at least two unique and creative elements to your 2-D Estate design that go beyond the basic requirements mentioned above. Describe these elements and how they enhance the overall appeal of your design. (2)

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1. Presentation and neatness (4)

# **Question 2**

* 1. Study the following sketch of a Circular Park and answer the questions that follow:



Match the following terminology with the correct line or features on the sketch.

E.g. Boundary= Circumference

Chord Radius Centre Diameter Circumference Segment

|  |  |
| --- | --- |
| a |  |
| b |  |
| c |  |
| d |  |
| e |  |

(5)

# Question 3

3.1. Find the missing values in the Magic Square below. Each column and row (vertical, horizontal, and diagonal) must add up to the given sum.

### The sum is 15,3

|  |  |  |
| --- | --- | --- |
| **6,9** | \_\_  3.1.1 ------------- | 3.1.2 ----------------- |
| 3.1.3 ---------------- | **5,1** | **5,3** |
| 3.1.4 ---------------- | 3.1.5 ----------------- | 3.1.6 -------------------- |

### (6)

3.2. The distance from Soweto to Durban is 588 km.

The distance from Soweto to Cape Town is 1395 km.

* + 1. Which is further from Soweto, Durban or Cape Town?

(1)

* + 1. How much further?

(1)

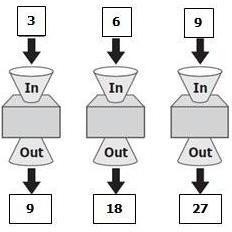
# Question 4

* 1. These figures form a pattern.

If the pattern continues the same way, what will be the 11th shape in the pattern? (1)

|  |  |  |  |
| --- | --- | --- | --- |
| a. | b. | c. | d. |

4.2 A number machine uses a multiplication rule to change into different numbers. The picture shows what happened when three numbers went into and came out of the same number machine.



|  |  |  |  |
| --- | --- | --- | --- |
| a. 30 | b. 33 | c. 36 | d. 39 |

What number should come out if the number 11 goes into the machine? (1)

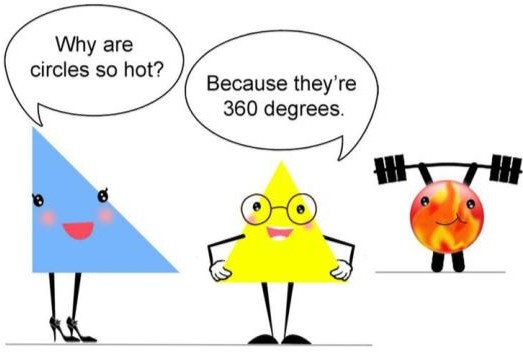
* 1. The first four fractions in the pattern below were made using the subtraction rule.

………….

If the pattern continues the same way, what will be the next fraction in the pattern?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | d) 2 |

(1)



**GRAND TOTAL [50 MARKS]**

**!!!THE END!!! ACE IT!!!**