

**MATHEMATICS**

**JUNE 2016**

**GRADE 7**

Name of learner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Surname of learner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

School: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

60

Time: 1 hour 30 minutes

Marks: 60

**INSTRUCTIONS TO LEARNERS**

1. Answer ALL questions.
2. Read ALL questions carefully
3. Show your calculations
4. You may use a calculator unless stated differently
5. Write neatly and legibly
6. Answer on the question paper in the spaces provided

This paper consists of 09 pages

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **QUESTION 1** Circle the letter of the correct answer. | | | | | | | | | | | |  |
|  | |  |  | | |  | | | |  |  |  |
| 1.1 |  | | What is the value of the underlined digit in 202,31**5**? | | | | | | | | |  |
|  |  | |  |  | | | | | |  |  |  |
|  |  | | A |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | B |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | C |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | D |  | | | | | | | | (1) |
|  |  | |  |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
| 1.2 |  | |  | | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | A |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | B |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | C |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | D |  | | | | | | | | (1) |
|  |  | |  |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
| 1.3 |  | | Lines that are equal distance apart are called…. | | | | | | | | |  |
|  |  | |  | | | | | | | | |  |
|  |  | | A | transversal lines | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | B | parallel lines | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | C | Intersecting lines | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | D | perpendicular lines | | | | | | | | (1) |
|  |  | |  |  | | | | | | | |  |
| 1.4 |  | | What percentage is the same as 20 marks out of 50 marks? | | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | A | 20% | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | B | 40% | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | C | 70 % | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | D | 30 % | | | | | | | | (1) |
|  |  | |  |  | | | | | | | |  |
| 1.5 |  | | Determine the volume of a cube if one edge is | | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | A |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | B |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | C |  | | | | | | | |  |
|  |  | |  |  | | | | | | | |  |
|  |  | | D |  | | | | | | | | (1) |
|  |  | |  |  | | | | | | | |  |
|  |  | |  |  | | | | | | | | [5] |
|  |  | |  |  | | | | | | | |  |
| **QUESTION 2** | | | | | | | | | | | |  |
|  | |  |  | | | |  |  | | | |  |
| 2.1 | |  | Find the answer without using a calculator. Show your steps. | | | | | | | | |  |
|  | |  |  | | | |  | |  | |  |  |
|  | |  | 2.1.1 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (2) |
|  | |  | 2.1.2 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  |  | | | |  | |  | | |  |
|  | |  | 2.1.3 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  |  | | | |  | |  | |  |  |
|  | |  | 2.1.4 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (2) |
|  | |  |  | | | |  | |  | |  |  |
|  | |  | 2.1.5 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  |  | | | |  | |  | | |  |
| 2.2 | |  | Fill in : <, > or = in the space provided to make the statement true. | | | | | | | | |  |
|  | |  |  | | | |  |  | | | |  |
|  | |  | 2.2.1 | | 0,03 0,3 | | | | | | | (1) |
|  | |  |  | | | | | | |  |
|  | |  | 2.2.2 | |  | | | | | | |  |
|  | |  |  | | | | | | | (1) |
|  | | | | | | | | | | | | |
| 2.3 | |  | Study Jane’s cupcake recipe below, and answer the questions that follow :  **Jane’s cupcake recipe**  **(Makes 25 cup cakes)**  2 cups flour  125 g butter  1 cup milk  2 eggs  200 g sugar  2 teaspoon baking powder  ½ teaspoon salt | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
|  | |  |  | | | |  |  | | | |  |
|  | |  | 2.3.1 How much flour will she need to make 50 cup cakes? | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | 2.3.2 If she buys 2 dozen eggs, then how many cupcakes can she make? | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (2) |
|  | |  | 2.3.3 How much butter will be needed if 2 dozen eggs are used? | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
| 2.4 | |  | Dale bought a pair of trousers which cost R85. He received 5 % discount. What was the amount paid after the discount? | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  |  | | | |  |  | | |  | [22] |
| **QUESTION 3** | | | | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
| 3.1 | |  | Study the table below and answer the questions that follow. | | | | | | | | |  |
|  | |  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Input |  |  |  |  |  |  | m | | Output | 4 | 7 | 10 |  |  |  | 25 | | | | | | | | | |  |
|  | |  | 3.1.1 Complete the table | | | | | | | | | (2) |
|  | |  | 3.1.2 Determine the value of m from the table above | | | | | | | | |  |
|  | |  | 3.1.3 Describe the rule for the output in your own words | | | | | | | | | (3) |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
| 3.2 | |  | Complete the flow diagram below by using the given rule | | | | | | | | |  |
|  | |  |  | | | | | | | | | (3) |
| **QUESTION 4**   |  |  | | --- | --- | |  |  | | 4.1 | Study the diagram below, and complete the statement that follows. | |  | Y  Q  R  X | | 4.1.1 | \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ are parallel lines | | | | | | | | | | | | | (1) |
| 4.2 | |  | Name the parts of the circle that are listed. | | | | | | | | |  |
| 4.2.1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_  4.2.2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_  4.2.3\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |  |  | | | | | | | | |  |
| **QUESTION 5** | | | | | | | | | | | | (3)  [4] |
|  | |  |  | | | |  |  | | |  |  |
| 5.1 | |  | Study the diagram and complete the statement that follows. | | | | | | | | |  |
| E  D  **F**  A  B  C  K  L  M | |  |  | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | and \_\_\_\_\_\_\_\_\_\_\_\_\_ are congruent. | | | | | | | | | (1) |
|  | |  |  | | | |  |  | | | |  |
|  | |  |  | | | |  |  | | |  |  |
| 5.2 | |  | In any right-angled triangle , | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | The largest angle = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
|  | |  |  | | | |  |  | | | |  |
|  | |  |  | | | |  |  | | |  |  |
| 5.3 | |  | Study the diagram and answer the questions that follow | | | | | | | | |  |
|  | |  | C  A  B  18 *cm* | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | 5.3.1 What is the length of? | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | 5.3.2 If then what is the size of?  Give a reason for your answer | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (2) |
|  | |  |  | | | |  |  | | |  |  |
|  | |  |  | | | |  |  | | |  | [5] |
| **QUESTION 6** | | | | | | | | | | | |  |
|  | |  |  | | | |  |  | | |  |  |
| 6.1 | |  | Write down the formula for the volume of a rectangular prism | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (1) |
|  | |  |  | | | |  |  | | |  |  |
| 6.2 | |  | The figure below is a rectangle. 𝐴𝐵 8*cm* and 𝐴𝐷=4 𝑐𝑚. E is the midpoint of DC.  A  D  B  C  E  D  C | | | | | | | | |  |
|  | |  |  | | | | | | | | |  |
|  | |  | 6.2.1 Calculate the area of 𝐴𝐵𝐶 | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  | 6.2.2 Calculate the area of∆𝐴𝐷𝐸. | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (3) |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | 6.2.3 Calculate the area of 𝐴𝐵𝐶𝐸. | | | | | | | | |  |
|  | |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (2) |
| 6.3 | |  | Use the formulae to calculate the total surface area of the figure below. | | | | | | | | |  |
|  | |  |  | | | | | | | | |  |
|  | |  | 6 cm  4 cm  2cm  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | (6) |
|  | |  |  | | | |  |  | | |  |  |
|  | |  | TOTAL = 60 | | | | | | | | |  |