

# CYCLE TEST

**TERM 1**

**D9 JE**

**GRADE 9**

MATHEMATICS

# 2014

# SCHOOL BASED ASSESSMENT TASK

# MARKS: 50

# WEIGHTED MARK: 10

# SUGGESTED TIME: 1 hour

# TERM 1: Investigation

**INVESTIGATION**

**MARKS: 75 EXAMINER :**

**TIME: 1 hour MODERATOR:**

**This question paper consists of 6 pages**

**NAME :**

**GRADE 9 :**

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| **MATHEMATICS** |

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| **INSTRUCTIONS AND INFORMATION**  1. This question paper consists of **SECTION** A and **SECTION B** based on the prescribed content framework in the CAPS document.  **SECTION A: MULTIPLE CHOICE**  QUESTION 1: TEN MULTIPLE CHOICE QUESTIONS BASED ON ALL  TOPICS COVERED  ANSWER ALL QUESTIONS IN THE SPACES PROVIDED  **SECTION B: FOUR QUESTIONS BASED** ON ALL TOPICS COVERED  QUESTION 2: ALGEBRAIC EXPRESSIONS AND EXPONENTS  QUESTION 3: EQUATIONS AND EXPONENTS  QUESTION 4: RATIO, RATE, PRORTION AND FINANCIAL MATHEMATICS  QUESTION 5: NUMBER PATTERNS AND FUNCTIONS  2. Answer ALL questions in both SECTIONS.  3. A non-programmable calculator may be used unless otherwise stated.  4. In **SECTION A** **circle** the letter of the correct answer; and if you change your decision cross out the circled letter and circle your new choice  5. In **SECTION B** show all necessary steps in your working unless otherwise stated.  6. When answering questions, apply your knowledge, skills and insight.  7. Number the answers correctly according to the numbering system used in this question paper.  8. Write neatly and legibly. |

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| **SECTION A: MULTIPLE CHOICE**  **QUESTION 1**  Choose the correct answers | | | | |
| 1.1 | Which of the following numbers is rational? | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
| 1.2 |  | |  | (1) |
|  | A. | -9 |  |  |
|  | B. | 27 |  |  |
|  | C. | -27 |  |  |
|  | D. | -6 |  |  |
| 1.3 | The ratio equivalent to 2 : 3 is | |  | (1) |
|  | A. | 1 : 4 |  |  |
|  | B. | 2: 6 |  |  |
|  | C. | 14 : 21 |  |  |
|  | D. | 4 : 8 |  |  |
| 1.4 | A man gives away half of his money to his friend, and after that 10% of what he has left to charity. What is the percentage of his original amount that he keeps? | |  | (1) |
|  | A. | 55% |  |  |
|  | B. | 45% |  |  |
|  | C. | 5% |  |  |
|  | D. | 40% |  |  |
| 1.5 | Write 0,000 003 56 in scientific notation. | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
| 1.6 | |  | | --- | | Divide R5 600 in the ratio 4: 5: 7. | |  | | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
| 1.7 | If the following fractions are arranged from lowest to the highest then the middle fraction is: | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. | 0,303 |  |  |
|  | D. | 0,313 |  |  |
| 1.8 | Simplify : + 2 | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
| 1.9 | Simplify | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
| 1.10 | Solve for  in | |  | (1) |
|  | A. |  |  |  |
|  | B. |  |  |  |
|  | C. |  |  |  |
|  | D. |  |  |  |
|  |  |  |  | **[10]** |
| **SECTION B**  QUESTION 2 | | | | |
| 2.1 | Factorise fully | |  |  |
|  | 2.1.1 |  |  | (3) |
|  | 2.1.2 |  |  | (3) |
| 2.2 | f  and , find the value of | |  | (4) |
| 2.3 | Simplify: | |  |  |
|  | 2.3.1 |  |  | (3) |
|  | 2.3.2 |  |  | (4) |
|  | 2.3.3 |  |  | (4) |
|  |  |  |  | **[21]** |
| QUESTION 3 | | | | |
| 3.1 | Solve for | |  |  |
|  | 3.1.1 |  |  | (4) |
|  | 3.1.2 |  |  | (4) |
|  | 3.1.3 |  |  | (4) |
|  |  |  |  | **[12]** |
| QUESTION 4 | | | | |
| 4.1 | There are 96 boys and 120 girls in a Grade 9 class. Write down the ratio of the number of boys to the number of girls in its simplest form. | |  | (2) |
| 4.2 | Five men take 45 hours to build a wall. How long will it take nine men working at the same pace to build this wall? | |  | (2) |
| 4.3 | It takes Linda 30 minutes to walk from home to school when walking at 5 km/h. What is her average cycling speed if it takes her 15 minutes by bike to travel the same distance? | |  | (3) |
| 4.4 | A pair of jeans marked at R250-00 is sold at a discount of 13%. Determine the selling price. | |  | (2) |
| 4.5 | How long will it take for an investment of R3000 at 8% per annum simple interest to earn R960 interest? | |  | (4) |
| 4.6 | Calculate the amount after 3 years on an investment of R6 500 at a compound interest of 7,5% per annum. | |  | (3) |
|  |  | |  | **[16]** |
| QUESTION 5 | | | | |
| 5.1 | Study the pattern below and then answer the questions that follow. | |  |  |
|  | 5.1.1 | Find the terms represented by *x* ; y and *z* |  | (3) |
|  |  |  |  |  |
|  | 5.1.2 | Describe the pattern in 4.1.1 in your own words |  | (1) |
|  | 5.1.3 | Write down the equation representing the general term of this pattern in the form *Tn* = ….. |  | (2) |
|  | 5.1.4 | Use your formula to find the 9th term in the sequence. |  | (2) |
| 5.2 | Study the flow diagram below and answer the questions that follow.  C:\Users\Preetha Sooknanan\Pictures\ad\41.png | |  |  |
|  | 5.2.1 | Find the values of the output values. |  | (4) |
|  | 5.2.2 | Represent the relationship graphically. |  | (2) |
|  | 5.2.3 | Is the graph an increasing or decreasing function? Explain. |  | (2) |
|  |  |  |  | **[16]** |

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| **Total** | **75 Marks** |