

# 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: 50 EXAMINER :**

**TIME: 1 hour MODERATOR:**

**This question paper consists of 7 pages**

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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  CONTENT AREAS COVERED  **ANSWER ALL SECTIONS ON SPACE PROVIDED**.  **SECTION B: THREE QUESTIONS BASED ON COVERED TOPICS**  QUESTION 2: FACTORS, RATIO AND RATE  QUESTION 3: FINANCIAL MATHEMATICS, PATTERNS AND FUNCTIONS  QUESTION 4: SQUARES, CUBES, SQUARE ROOTS, CUBE ROOTS AND ALGEBRAIC EXPRESSIONS  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, candidates must apply their 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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| QUESTION 1  FOR EACH QUESTION, CIRCLE THE LETTER OF THE CORRECT ANSWER. | | | | |
| 1.1 | Which of the following expressions shows how 36 can be expressed as a product of its prime factors?  A.  B.  C.  D. | |  | (1) |
| 1.2 | Which of the numbers written below is a rational number?  A.  B.  C.  D. | |  | (1) |
| 1.3 | Which of the following expressions is equal to  ?  A.  B.  C.  D. | |  | (1) |
| 1.4 | Siya created this number pattern: 2 ; 8 ; 26 ; 80 ; 242. Which of the following rules describes his number pattern?  A. Add 6 to the previous term  B. Multiply the previous term by 3 and add 2  C. Multiply the previous term by 4  D. Multiply the previous term by 3 and add 4 | |  | (1) |
| 1.5 | 1.5 If and , the value of −2 is    A. 10  B. −48  C. −96  D. 40 | |  | (1) |
| 1.6 | 1.6 Consider the following flow diagram:    The value of 𝑎 is  A.  B.  C.  D. | |  | (1) |
| 1.7 | Which of the statements below is the BEST estimate of  A.  B.  C.  D. | |  | (1) |
| 1.8 | There were boys and girls in a parade. Each person carried 2 balloons. Which of the expressions below represents the total number of balloons that were carried in the parade.    A.  B.  C.  D. | |  | (1) |
| 1.9 | Consider the ordered pairs of numbers (0 ;−1) and (1 ; 3). Which of the equations below is satisfied by BOTH of these co-ordinate pairs?    A.  B.  C.  D. | |  | (1) |
| 1.10 | 1.10 Alongside is a diagram of a rectangular  garden. The garden has a length of () metres and a width of 𝑥 metres.  The white area is a rectangular path that  is 1 metre wide. Which of the expressions  below represents the area of the shaded  portion of the garden.    A.  B.  C.  D. | |  | (1) |
|  | | | | **[10]** |
| QUESTION 2 | | | | |
| 2.1 | A number between 10 and 20 is both a factor of 60 and a multiple of 6. What is this number? | |  | (1) |
| 2.2 | Rewrite 0, 0000605 in scientific notation. | |  | (1) |
| 2.3 | Purple paint is mixed from red and blue paint in the ratio of 3 litres red paint to 2 litres blue paint. How many litres of red paint is needed when making 30 litres of purple paint? | |  | (3) |
| 2.4 | A fast food outlet needs 9,5 litres of cooking oil to fry 100 kilograms of chips. How many kilograms of chips can be fried with 47,5 litres of oil? | |  | (3) |
| 2.5 | Mr Ndlovu drives 720 kilometres from Richards Bay to Magaliesburg in 7 hours. Mrs Moyo drives 1540 kilometres from Stellenbosch to Hekpoort in 15 hours. Which driver maintained a higher average speed? Show all your working. | |  | (6) |
|  |  | |  | [14] |
| QUESTION 3 | | | | |
| 3.1 | Zoey takes out a hire-purchase loan of R35 000 for furniture that she has bought for her new house. She makes monthly repayments over a period of 5 years. The interest rate is 14% per annum simple interest on the full amount of the loan. | |  |  |
|  | 3.1.1 | Calculate how much Zoey will pay in total for the furniture. |  | (3) |
|  | 3.1.2 | What percentage of the loan has been paid off after Zoey has made a payment every month for 3 years and 3 months? |  | (3) |
| 3.2 | Sam deposits R7500 into a savings account. Calculate how much money his savings will be worth after 3 years if interest on the savings account is 11% per annum compounded annually. | |  | (3) |
| 3.3 | The shapes shown are made of ice cream sticks.    The table represents the number of sticks (𝑦) needed to create each shape (𝑥). | |  |  |
|  | 3.3.1 | Complete the table by filling in the missing numbers. |  | (2) |
|  | 3.3.2 | Determine and write down an equation to represent the relationship between and 𝑦 in the table. |  | (3) |
|  | 3.3.3 | Which shape number consists of 92 ice cream sticks? |  | (3) |
|  | | | | **[17]** |
| QUESTION 4 | | | | |
| 4.1 | Simplify | |  |  |
|  | 4.1.1 | 0,125 |  | (2) |
|  | 4.1.2 |  |  | (3) |
|  | 4.1.3 |  |  | (2) |
| 4.2 | Simplify | |  |  |
|  | 4.2.1 |  |  | (3) |
|  | 4.2.2 |  |  | (3) |
|  | 4.2.3 |  |  | (3) |
|  | 4.2.4 |  |  | (3) |
|  | | | | **[19]** |

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| **Total** | **60 Marks** |