

# CYCLE TEST 1

**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**

**2015**

**MARKS: 50 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  CONTENT AREAS COVERED  ANSWER ALL SECTIONS IN THE SPACES PROVIDED  **SECTION B: THREE QUESTIONS BASED** ON ALL CONTENT AREAS COVERED  QUESTION 2: COMMON FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND RATE, AND FINANCIAL MATHEMATICS  QUESTION 3: ALGEBRAIC EXPRESSIONS AND EXPONENTS  QUESTION 4: NUMBER PATTERNS  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** | | |  |
|  | | |  |
| **Question 1** | | | |
| 1.1 | Which of the following is/are not rational numbers? | | |
|  | A  B  C  D | Terminating decimals  Recurring decimals  Square root of a perfect square  Cube root of a prime number | (1) |
| 1.2 | Which of the following numbers is/are rational? | | |
|  | A  B  C  D |  | (1) |
| 1.3 | Christian installed an electric pump to pump water from a borehole into a  30 000 litre cement dam. If the water is pumped at a rate of 75 litres per  minute. How long does it take to fill the dam? | | |
|  | A  B  C  D | 4 h  6 h 40 min  6 h 20 min  3 h 40 min | (1) |
| 1.4 | How many terms are there in the expression:  ? | | |
|  | A  B  C  D | 4  1  8  2 | (1) |
| 1.5 | The value of | | |
|  | A  B  C  D |  | (1) |
| 1.6 |  | | |
|  | A  B  C  D |  | (1) |
| 1.7 | How many values of *x* satisfy the equation | | |
|  | A  B  C  D | 0  1  2  More than 2 | (1) |
| 1.8 | Which of the following expressions is equal to | | |
|  | A  B  C  D |  | (1) |
| 1.9 | If 𝑥 and 𝑦, the value of is | | |
|  | A  B  C  D | 10  −48  −96  40 | (1) |
| 1.10 | A watch keeps exact time, but it has only an hour arm. When the hour is  of the distance between 4 and 5, the correct time is: | | |
|  | A  B  C  D | 04:10  04:20  04:22  04:24 | (1) |
|  | | | **[10]** |

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| **Question 2** | | | |
| 2.1 | Complete the missing values in the table below:   |  |  |  | | --- | --- | --- | | Fraction | Decimal | Percentage | |  |  |  | |  |  |  | |  |  |  | | | (6) |
| 2.2 | Usain Bolt ran the 100m final at the 2012 Olympic Games in 9,63 seconds.  Convert the time he ran the race to minutes. Write your answer in scientific notation | | (1) |
| 2.3 | Increase 280 in the ratio 5 : 2 | | (2) |
| 2.4 | Petrus takes a bus to school. The bus travels at an average speed of 40km/h. The school is 9km from his house. How many minutes does he take to get to school? | | (3) |
| 2.5 | Bongiwe invests R12 000 in a savings account at 6,5% per annum compound interest. Calculate how much there will be in the savings account after 5 years | | (3) |
| 2.6 | Philani bought a scooter for R15 000. He paid 15% of the amount in cash and sgned a hire-purchase agreement to pay the balance in 24 equal monthly instalments. The interest rate is 10% per annum. | | |
|  | 2.6.1 | How much did he pay in cash? | (1) |
|  | 2.6.2 | Calculate the total amount that he will pay on hire purchase. | (4) |
|  | | | **[20]** |
| **Question 3** | | | |
| 3.1 | Simplify | |  |
|  | 3.1.1 |  | (3) |
|  | 3.1.2 |  | (3) |
|  | 3.1.3 |  | (4) |
| 3.2 | Simplify | |  |
|  | 3.2.1 |  | (3) |
|  | 3.2.2 |  | (2) |
|  | | | **[15]** |
| **Question 4** | | | |
| 4.1 | Answer the following questions.  Matchsticks are arrange as shown in the following figures | | |
|  | 4.1.1 | Determine the number of matchsticks in the next figure if the pattern continued. | (2) |
|  | 4.1.2 | Write down the general term of the given sequence of the matchsticks in the form. | (1) |
|  | 4.1.3 | Determine the number of figures in the 20th figure. | (2) |
|  | | | **[5]** |
| **TOTAL : 50 MARKS** | | | |

**FORMULA-SHEET**

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| Simple Interest: | Compound Interest: |