**NAME OF THE HIGH/SECONDARY SCHOOL**

SCHOOL LOGO

# CYCLE TEST 2018

**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 8 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 ON SPACE PROVIDED**. **SECTION B: FIVE QUESTIONS BASED ON FIVE CONTENT AREAS**QUESTION 2: FINANCIAL MATHEMATICSQUESTION 3: ALGEBRAIC EXPRESSION AND EXPONENTSQUESTION 4: COMMON FRACTION, DECIMAL, PERCENTAGE AND INEQUALITIES.QUESTION 5: NUMERIC AND GEOMETRIC PATTERNS2. 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 choice5. 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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| **SECTION A** |  |
| **Question 1** |  |
| 1.1 | Which of the following is not a property of rational numbers?  |
|  | ABCD | Terminating decimals Recurring decimals Square root of a perfect square Cube root of a prime number  | (1) |
| 1.2 | Which ONE of the following numbers is rational? |
|  | ABCD | $$π$$$$\sqrt{-1}$$$$1,2\dot{3}$$$$\sqrt{10}$$ | (1) |
| 1.3 | Christian installed an electric pump to pump water from a borehole into a30 000 litre cement dam. If the water is pumped at a rate of 75 litres perminute. How long does it take to fill the dam? |
|  | ABCD | 4 h6 h 40 min6 h 20 min3 h 40 min | (1) |
| 1.4 | How many terms are there in the expression: $\frac{-x^{2}-x+2}{x-1}×\frac{3}{x-2}$ ? |
|  | ABCD | 4182 | (1) |
| 1.5 | The value of $\sqrt[3]{27x^{3}}$ |
|  | ABCD | $$3x^{2}$$$$9x^{2}$$$$9x^{9}$$$$3x$$ | (1) |
| 1.6 | (*x* – 3)2 = |
|  | ABCD |  | (1) |
| 1.7 | How many values of *x* satisfy the equation 5(*x* – 3) = -15 +5*x* |
|  | ABCD | 012More than 2 | (1) |
| 1.8 | Which of the following expressions is equal to $3p^{2}+2p+2p^{2}+4p$ |
|  | ABCD | $$5p^{4}+6p^{2}$$$$8p^{2}$$$$5p^{2}+6p$$$$8p^{6}$$ | (1) |
| 1.9 | If 𝑥=3 and 𝑦=−2, the value of $-2xy^{3}$ is |
|  | ABCD | 10−48−9640 | (1) |
| 1.10 | A watch keeps exact time, but it has only an hour hand. When the hour is $\frac{2}{5}$ isof the distance between the 4 and the 5, the correct time is: |
|  | ABCD | 04:10 04:20 04:22 04:24  | (1) |
|  | **[10]** |

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| **Question 2** |
| 2.1 | 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) |
| 2.2 | Increase 280 in the ratio 5 : 2  | (2) |
| 2.3 | 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) |
| 2.4 | 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) |
| 2.5 | Philani bough 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. |
|  | 2.5.1 | How much did he pay in cash? | (1) |
|  | 2.5.2 | Calculate the total amount that he must still pay. | (4) |
|  | **[14]** |
| **Question 3** |
| 3.1 | Multiply and simplify if necessary. |  |
|  | 3.1.1 | $$3a^{2}bc^{2}(3a^{2}-4b-c)$$ | (3) |
|  | 3.1.2 | $$(x-2)(3+2x)$$ | (4) |
|  | 3.1.3 | $$4x^{2}+2x-(x-2)^{2}$$ | (4) |
| 3.2 | Simplify |
|  | 3.2.1 | $$\frac{2^{x+1}.8^{x-1}}{2^{x-1}}$$ | (4) |
|  | **[15]** |
| **Question 4** |
| 4.1 | Complete the missing values in the table below: | (3) |
| 4.2 | Complete the missing values in the table below:

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| --- | --- | --- |
| **Set-builder notation** | **Number line** | **Interval notation** |
| $x/$ $3\leq x<6$ and $x\in R$ |  | $$x\in [3,6)$$ |
|  |  | $$x\in [3,6]$$ |

 | (2) |
|  | **[5]** |

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| **Question 5** |
| 5.1 | Answer the following questions.Matchsticks are arrange as shown in the following figures |
|  | 5.1.1 | Determine the number of matchsticks in the next figure if the pattern continued. | (1) |
|  | 5.1.2 | Write down the general term of the given sequence of the matchsticks in the form. | (2) |
|  | 5.1.3 | Determine the number of figures in the 20th figure. | (1) |
| 5.2 | Complete the following patterns by drawing in the next term. |
|  | 5.2.1 |  | (1) |
|  | 5.2.2 |  | (1) |
|  | **[6]** |
| **TOTAL : 50 MARKS** |

**FORMULA-SHEET**

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| Simple Interest:$$SI=\frac{Prn}{100}$$$$A=P(1+in)$$ | Compound Interest:$$A=P(1+i)^{n}$$$$A=P\left(1+\frac{r}{100}\right)^{n}$$ |