

# CYCLE TEST

**TERM 1**

**D9 JE**

**GRADE 9**

MATHEMATICS

MEMORANDUM

# 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 memorandum consists of 8 pages**

|  |  |  |  |
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| **SECTION A** | | |  |
| **Question 1** | | |  |
| 1.1 | Which of the following is not a property of 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 ONE of the following numbers is 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 | (*x* – 3)2 = | |  |
|  | A  B  C  D |  | (1) |
| 1.7 | How many values of *x* satisfy the equation  5(*x* – 3) = -15 +5*x* | |  |
|  | 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=3 and 𝑦=−2, the value of is | |  |
|  | A  B  C  D | 10  −48  −96  40 |  |
| 1.10 | A watch keeps exact time, but it has only an hour hand. When the hour is is  of the distance between the 4 and the 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 | |  |  |  | | --- | --- | --- | | Fraction | Decimal | Percentage | |  | 0,77 | 77% | | = |  | 44% | |  | 0,467 |  | | | | (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  700 | | | (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?    OR | | | (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 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. | | |  |
|  | 2.6.1 | 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** | | | | |
|  | 4.1.1 | | Determine the number of matchsticks in the next figure if the pattern continued. | (1) |
|  | 4.1.2 | | Write down the general term of the given sequence of the matchsticks in the form. | (2) |
|  | 4.1.3 | | Determine the number of figures in the 20th figure. | (2) |
|  | | | | **[5]** |

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| **TOTAL : 50 MARKS** |