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| **Wiskunde Graad 9****Maart Toets** **75 punte****1½ uur** | ***Mathematics Grade 9******March Test*** ***75 marks*** ***1½ hour*** |

**Vraag 1 / *Question1***

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| 1 | Bereken die volgende sonder die gebruik van ‘n sakrekenaar. Wys alle stappe! *Calculate the following without the use of a calculator. Show all steps!*  |  |
| 1.1 | $$18-10+4-6$$ | (1) |
| 1.2 | $$-24-(-18)$$ | (2) |
| 1.3 | $$8×\left(-3\right)÷(-6)$$ | (2) |
| 1.4 | $$-4^{2}+(-4)^{3}$$ | (3) |
| 1.5 | $$\sqrt{169}-\sqrt[3]{-0,064}$$ | (3) |
| 1.6 | $$\sqrt{1\frac{9}{16}}×1\frac{2}{3}÷9,\dot{3}$$ | (4) |

 [15]

**Vraag 2 / *Question 2***

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| 2.1 | Vereenvoudig die volgende en skryf jou antwoord as positiewe eksponente. *Simplify the following and give your answers as positive exponents.*  |  |
| 2.1.1 | $$-4(x^{3})^{0}$$ | (1) |
| 2.1.2 | $$(-4x^{3})^{0}$$ | (1) |
| 2.1.3 | $$3^{-1}a^{2}b^{-5}$$ | (2) |
| 2.1.4 | $$(-2y^{2})(-2y)^{-2}$$ | (3) |
| 2.1.5 |  | (2) |
| 2.2 | Bereken die volgende sonder jou sakrekenaar. Wys sal jou werk. *Calculate the following without the use of a calculator. Show all your work.*  | (3) |
|  | 4-2 x 62 x 3-2 |  |
| 2.3 | Los die volgende vergelykings op. *Solve the following equations.* |  |
| 2.3.1 | $$3^{x}=81$$ | (2) |
| 2.3.2 | $$5^{x}=\frac{1}{25}$$ | (2) |
| 2.3.3 | $$2^{x+4}=1$$ | (2) |
|  |  |  |
| 2.4 | Bereken die volgende en gee jou finale antwoord in wetenskaplike notasie .*Calculate the following and give your final answer in scientific notation.*  |  |
|  | $$2,5×10^{6}×6×10^{10}+5,7×10^{-8}$$ | (3) |

 [21]

**Vraag 3 / *Question 3***

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| 3.1 | Jy ontvang R2500 by jou oupa op jou verjaarsdag. Jy besluit om die geld te belê by die bank vir jou studies oor vier jaar. Die bank gee jou die volgende twee opsies. *You receive R2500 from your father on your birthday. You decide to invest the money in the bank for you studies four years from now. The bank gives you the following two options.* **OPSIE A */OPTION A:*** Belê teen 8% saamgestelde rente per jaar vir die vier jaar.  **OPSIE B */OPTION A:*** Belê teen 7,5% enkelvoudige rente per jaar vir die vier jaar. Besluit watter een die meeste geld vir jou gaan genereer oor die gegewe tydperk. *Decide which one will generate more money in the give period of time.*  | (7) |
| 3.2 | Bereken die persentasie verhoging as die prys van diesel vanaf R11,21 per liter verhoog word tot R12,30 per liter. Rond jou antwoord af tot 2 desimale plekke. *Calulate the percentage increase if the price of diesel increases from R11,21 per litre to R12,30 per litre. Round your answer off to 2 decimal places.*  | (4) |
| 3.3 |  ‘n Vliegtuig vlieg teen ‘n spoed van 0,9 x 103 km/h vir 24 uur. Hoe ver het die vliegtuig gevlieg? Gee die antwoord in wetenskaplike notasie.*An aircraft travels at a speed of 0,9 x 103*$0.9×10^{3}$ *km/h for 24 hours. How far has the aircraft travelled? Give the answer in scientific notation.* | (3) |

 [14]

**Vraag 4 / *Question 4***

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| 4.1 | Vereenvoudig / *Simplify:* |  |
| 4.1.1 | - x(5x + 1) | (2) |
| 4.1.2 | -2(3x + y)(5x -4y) | (3) |
| 4.1.3 |  | (4) |
|  |  |  |
| 4.2 | Los op vir x / *Solve for x:* |  |
| 4.2.1 | 3x – 1 = 5 | (2) |
| 4.2.2 | - 6 (x – 3) = 2 (x + 7) – 5 (x – 2) | (3)**[14]** |

**Vraag 5 / *Question 5***

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| Beskou ie volgende patroon wat met vuurhoutjies gepak is en beantwoord die vrae.*Consider the following pattern that is built with matches and answer the questions.* |
| Fig 3Fig 2Fig 1 |
| 5.1 | Teken die volgende figuur (Fig 4).*Draw the next figure (Fig 4) in the pattern*. | (1) |
| 5.2 | Beskou die tabel en skryf die waardes neer van a en b.*Consider the following table and write down the values of a and b*. |  |
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|  |  |  |  |  |  |
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| **Figure (n)** | 1 | 2 | 3 | 4 | 10 |
| **Number of matches (Tn)** | 8 | 15 | 22 | a | b |

 | (2) |
| 5.3 | Skryf die formule vir die nde term neer.*Write down the formula for the nth term.* | (2) |
| 5.4 | Watter figuur sal uit 50 vuurhoutjies bestaan?*Which figure will consist of 50 matches?* | (2) |
| 6.5 | Hoeveel vuurhoutjies word benodig om die 25ste figuur te maak?*How many matches will be needed to make the 25th figure?* | (1) |
|  |  | **[8]** |

**Vraag 6 / *Question 6***

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| Die verwantskap tussen x en y word voorgestel deur: /*The relationship between x and y is represented by:*  |
| Bepaal die waardes van m, n en p in die volgende tabel:*Determine the values of m, n and p in the following table:* |  |
|  | x | m | 2 | 4 | n | 100 |  |  |
|  | y | 1 | p | 3 | 26 | 51 |  | (3) |
|  |  | **[3]** |

**TOTAAL / TOTAL: 75**