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**JAARLIKSE NASIONALE ASSESSERING 2012**

**GRAAD 9**

**WISKUNDE**

**MODELTOETS 2012**

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| **Instruksies aan leerders:**  1. Vraag 1bestaan uit 10 meervoudigekeuse-vrae. Leerders moet die letter van  die regte antwoord omkring (sien oefenvraag hieronder).  2. Leerders moet vrae 2tot 9in die spasies soos voorsien beantwoord.  3. Goedgekeurde wetenskaplike sakrekenaars (nie-programeerbaar en nie –  grafies) mag gebruik word.  4. Die toets duur  uur.  **Voorbeeld** Omkring die letter met die regte antwoord. Watter van die onderstaande getalle is ‘n gemengde getal?  0 ; 0,2 ; ;   1. 0 2. 0,2   Jy het reg geantwoord as jy **B** omkring het. |  |

**Die toets begin op die volgende bladsy.**

**VRAAG 1**

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| 1.1 | Watter een van die volgende getalle is irrasionaal?  A.  B. 0,5  C.  D. |
| 1.2 | Watter van die volgende getalle lê tussen 0,07 en 0,08 op ‘n getallelyn?  A. 0,00075  B. 0,0075  C. 0,075  D. 0,75 |
| 1.3 | =  A. 3  B.  C.  D. 16 |
| 1.4 | =  A.    B.  C.  D. |
| 1.5 | A.  B.  C.  D. |

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| 1.6 | A.  B.  C.  D. |
| 1.7 | Faktoriseer  A.  B.  C.  D. |
| 1.8 | ‘n Verwer word per uur betaal. As hy R360 betaal word vir 12 ure  se werk, hoeveel sal hy betaal word vir 9 ure se werk?  A. R120  B. R180  C. R270  D. R480 |
| 1.9 | Watter getal ontbreek in die getalry ?  A.  B.  C.  D. |
| 1.10 | In word DF verleng na C. Die grootte van  is |
|  | A.  B.  C.  D. **[10]** |
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**VRAAG 2**

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| 2.1 | Skryf 0, 00000356 in wetenskaplike notasie. |  |  |

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| 2.2 | Bereken die waarde van . |  |  |

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| 2.3 | Vermenigvuldig 5²²+ 23 met |  |  |

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| 2.4 | Vereenvoudig: |  |  |

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|  | 2.4.1 |  |  |  |

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|  | 2.4.2 |  |  |  |

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|  | 2.4.3 |  |  |  |

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|  | 2.4.4 |  |  |  |

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|  | 2.4.5 |  |  |  |

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|  | 2.4.6 |  |  |  |

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| 2.5 | Faktoriseer volledig: |  |  |

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|  | 2.5.2 |  |  |  |

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| 2.6 | Los op vir |  |  |

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|  | 2.6.2 |  |  |  |

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|  | 2.6.3 |  |  |  |

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| **VRAAG 3** |  |  |

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| 3.1 | Skryf die verhouding 1 : 2 in die eenvoudigste vorm. |  |  |

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| 3.2 | 6 seuns dra elkeen R155,50 by om ‘n tent te koop. Bereken hoeveel elkeen  moet bydra indien daar 10 seuns in die groep is. |  |  |

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| 3.3 | Hoe lank sal dit neem vir ‘n belegging van R3000 teen 8% enkelvoudige  rente per jaar om R960 rente te verdien? |  |  |

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| 3.4 | Bereken wat R10 000 sal werd wees as dit belê word teen 10%  saamgestelde rente per jaar vir 3 jaar. |  |  |

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| **VRAAG 4** |

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| 4.1 | Vuurhoutjies word as volg gerangskik. |  |  |

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| Figuur 1 Figuur 2 Figuur 3 |

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|  | Bereken die aantal vuurhoutjies in die volgende figuur as die patroon aangaan. |  |  |

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| 4.2 | Skryf die algemene term vir die gegewe getalry van die vuurhoutjies in  die vorm |  |  |
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| 4.3 | Bereken die aantal vuurhoutjies in die 20ste figuur. |  |  |

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| **VRAAG 5** |

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| 5.1 | Bepaal die koördinate van P in die onderstaande grafiek. |  |  |

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| 5.2 | Bepaal die vergelykings van elk van die volgende reguitlyn grafieke. |  |  |

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| **Y3.png** |

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| 5.3 | Watter afleiding kan jy maak in verband met lyn AD en BC?  Gee ‘n rede vir jou antwoord. |  |  |

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| **VRAAG 6** |  |  |

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| 6.1 | A  N  H  E  W  S  C    1  1  2  2 |  |

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|  | In die bostaande figuur is CS || HN, , en . Bereken die waarde van . |  |  |

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| 6.2 | F:\ZzZ2.png |  |  |

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|  | In die bostaande figuur is AB = AC en BD = CD. |  |  |

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|  | 6.2.1 | Bewys dat ABD ADC. |  |  |

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|  | 6.2.2 | Bewys DA halveer |  |  |

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| 6.3 | ABCD is 'n parallellogram. Bereken die grootte van . |  |  |

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|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | (4) |

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| 6.4 | In , PQ || ST , PR = 10 , ST = 3 en SR = 6 |  |  |

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|  | P  Q    T  S    R |  |  |

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|  | 6.4.1 | Toon aan dat |  |  |

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|  | 6.4.2 | Bereken die lengte van PQ. |  |  |

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| **VRAAG 7** |  |  |

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| 7.1 | ‘n Leer staan teen ‘n muur en bereik ‘n hoogte van 12 teen die muur op.  Sy onderkant is 5 weg van die muur. Bereken die lengte van die leer. |  |  |

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| 7.2 | Bereken die hoogte van ‘n 5 silindriese olie houer met ‘n radius  van 20? () |  |  |

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| 7.3 | F:\ZzZ1.png | | |

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|  | In die bostaande driehoekige prisma is AB = 3 AC = 4 , BC = 5 en  CD = 12 . |  |  |

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|  | 7.3.1 | Toon aan dat ABC 'n reghoekige driehoek is. |  |  |

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|  | 7.3.2 | Gevolglik, bereken die buite-oppervlakte van die prisma. |  |  |

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| **VRAAG 8** |

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|  | 8.1.1 | Gebruik die bostaande figuur om die koördinate van A, B, C en D te bepaal. |  |  |

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|  | 8.1.2 | Skryf die koördinate van A' , B', C', en D' neer as die figuur 2 eenhede vertikaal afskuif en 2 eenhede na regs skuif. |  |  |

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|  | 8.1.3 | Skryf die koördinate van C'', die beeld van C, neer as die figuur in die X-as reflekteer word. |  |  |

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|  | 8.1.4 | Skryf die koördinate van B'', die beeld van B, neer as die figuur in die Y-as reflekteer word. |  |  |

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| **VRAAG 9** |  |  |

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| 9.1 | Die onderstaande datastel dui‘ n grad-9 klas se leerders se lengtes aan.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 140 | 149 | 152 | 159 | 153 | 143 | 161 | 152 | 145 | 162 | | 153 | 158 | 154 | 160 | 164 | 165 | 165 | 155 | 167 | 153 | | 148 | 166 | 144 | 160 | 150 | 155 | 141 | 162 | 161 | 151 | | 159 | 163 | 170 | 153 | 172 | 158 | 174 | 166 | 164 | 163 | |  |  |

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|  | 9.1.1 | Voltooi die tabel. |  |  |

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|  | |  |  |  | | --- | --- | --- | | Klasinterval | Telmerkies | Frekwensie | | 140---144 |  |  | | 145---149 |  |  | | 150---154 |  |  | | 155---159 |  |  | | 160---164 |  |  | | 165---169 |  |  | | 170---174 |  |  | |  | (14) |

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| 9.2 | Bepaal |  |  |

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|  | 9.2.1 | die omvang van die lengtes. |  |  |

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|  | 9.2.2 | die modale klasinterval. |  |  |

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|  | 9.2.3 | in watter klasinterval die mediaan lê. |  |  |

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|  |  | **TOTAAL : 140** |