



# education

---

Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

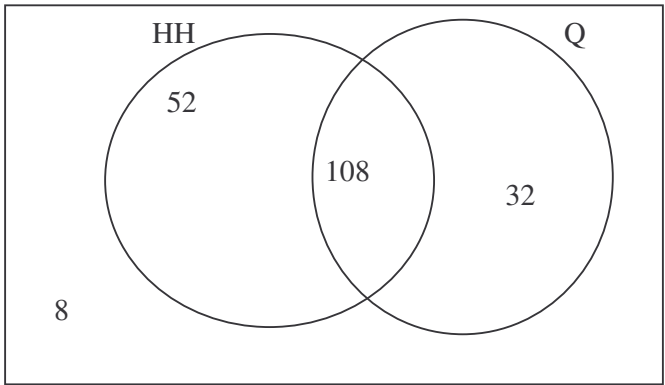
## **NATIONAL SENIOR CERTIFICATE**

**GRADE 10**

**WISKUNDE VS2**

**NOVEMBER 2006**

**Hierdie memorandum bestaan uit 4 bladsye.**

| VRAAG 1         |                                                                                                                                                                                                                                                                                                                            |                                                                                |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Uitkoms A       | Absoluut<br>Dit is volgens voorskrif in Suid-Afrika                                                                                                                                                                                                                                                                        | √ antwoord<br>√ aanvaarbare motivering<br>(2)                                  |
| Uitkoms B       | Onwaarskynlik<br>(Leerders kan 'n ener antwoord gee met aanvaarbare motivering)                                                                                                                                                                                                                                            | √ antwoord<br>√ aanvaarbare motivering<br>(2)                                  |
| Uitkoms C       | 50-50 kans<br>Daar is een van 2 moontlike uitkomst                                                                                                                                                                                                                                                                         | √ antwoord<br>√ aanvaarbare motivering<br>(2)                                  |
| Totaal: 6 punte |                                                                                                                                                                                                                                                                                                                            |                                                                                |
| VRAAG 2         |                                                                                                                                                                                                                                                                                                                            |                                                                                |
| 2.1             |                                                                                                                                                                                                                                         | √ 8 outside<br>√ 52 hip-hop<br>√ 108 in snyding<br>√ 32 qwaito<br>(4)          |
| 2.2             | $P(\text{slegs } Q) = \frac{32}{200} = \frac{4}{25}$                                                                                                                                                                                                                                                                       | √√ waarskynlikheid<br>(2)                                                      |
| 2.3             | $P(\text{nie een van die twee}) = \frac{8}{200} = \frac{1}{25}$                                                                                                                                                                                                                                                            | √√ waarskynlikheid<br>(2)                                                      |
| 2.4             | $P(\text{HH of } Q) = P(\text{HH}) + P(Q) - P(\text{HH en } Q)$ $= \frac{160}{200} + \frac{140}{200} - \frac{108}{200}$ $= \frac{192}{200} = \frac{24}{25}$ <p style="text-align: center;">OF</p> $P(\text{HH of } Q) = \frac{52 + 108 + 32}{200} = \frac{192}{200} = \frac{24}{25}$ <p style="text-align: center;">OF</p> | √ formule<br>√ substitusie<br>√ antwoord<br>OF<br>OF<br>OF<br>OF<br>(3)<br>(3) |

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |      |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------|-----|-----|-----|---|---|---|------|------|------|-----|-----|-----|---|------|------|-----|-----|-----|-----|---|------|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|-----|----------------------------------|
|            | $P(\text{HH of Q}) = 1 - P(\text{nie een van twee nie}) = 1 - \frac{1}{25} = \frac{24}{25}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <div>✓ formule</div> <div>✓ substitusie</div> <div>✓ antwoord</div>  | (3)  |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| Totaal: 11 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |      |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| VRAAG 3    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                      |      |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 3.1        | $n(S) = 36$ ( 2 dobbelstene $\therefore 6 \times 6 = 36$ moontlike uitkomste)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <div>✓✓ antwoord</div>                                               | (2)  |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
|            | <div>som = 4 : 3 moontlikhede</div> <div>som &lt; 5 : 6 moontlikhede</div> <div>OF</div> <div><div><div>1</div><div>1*</div><div>2*</div><div>3*</div><div>4</div><div>5</div><div>6</div></div><div><div>2</div><div>1*</div><div>2*</div><div>3</div><div>4</div><div>5</div><div>6</div></div><div><div>3</div><div>1*</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div><div><div>4</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div><div><div>5</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div><div><div>6</div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div></div></div> <div><div>donker : som sal 4 wees</div><div>* : som &lt; 5</div><div>OF</div><div>Twee rigting table dui die hele steekproefruimte aan</div><table><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>1</td><td>1+1*</td><td>2+1*</td><td>3+1*</td><td>4+1</td><td>5+1</td><td>6+1</td></tr><tr><td>2</td><td>2+1*</td><td>2+2*</td><td>3+2</td><td>4+2</td><td>5+2</td><td>6+2</td></tr><tr><td>3</td><td>3+1*</td><td>2+3</td><td>3+3</td><td>4+3</td><td>5+3</td><td>6+3</td></tr><tr><td>4</td><td>4+1</td><td>2+4</td><td>3+4</td><td>4+4</td><td>5+4</td><td>6+4</td></tr><tr><td>5</td><td>5+1</td><td>2+5</td><td>3+5</td><td>4+5</td><td>5+5</td><td>6+5</td></tr><tr><td>6</td><td>6+1</td><td>2+6</td><td>3+6</td><td>4+6</td><td>5+6</td><td>6+6</td></tr></table><div><div>donker : som sal 4 wees</div><div>* : som &lt; 5</div></div></div> |                                                                      | 1    | 2   | 3   | 4   | 5 | 6 | 1 | 1+1* | 2+1* | 3+1* | 4+1 | 5+1 | 6+1 | 2 | 2+1* | 2+2* | 3+2 | 4+2 | 5+2 | 6+2 | 3 | 3+1* | 2+3 | 3+3 | 4+3 | 5+3 | 6+3 | 4 | 4+1 | 2+4 | 3+4 | 4+4 | 5+4 | 6+4 | 5 | 5+1 | 2+5 | 3+5 | 4+5 | 5+5 | 6+5 | 6 | 6+1 | 2+6 | 3+6 | 4+6 | 5+6 | 6+6 | <div>moontlike berekeninge</div> |
|            | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2                                                                    | 3    | 4   | 5   | 6   |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 1          | 1+1*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2+1*                                                                 | 3+1* | 4+1 | 5+1 | 6+1 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 2          | 2+1*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2+2*                                                                 | 3+2  | 4+2 | 5+2 | 6+2 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 3          | 3+1*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2+3                                                                  | 3+3  | 4+3 | 5+3 | 6+3 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 4          | 4+1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2+4                                                                  | 3+4  | 4+4 | 5+4 | 6+4 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 5          | 5+1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2+5                                                                  | 3+5  | 4+5 | 5+5 | 6+5 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 6          | 6+1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2+6                                                                  | 3+6  | 4+6 | 5+6 | 6+6 |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 3.2        | $P(\text{som} = 4) = \frac{3}{36} = \frac{1}{12}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <div>✓ berekening 3 moontlikhede</div> <div>✓ waarskynlikheid</div>  | (2)  |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |
| 3.3        | $P(\text{som} < 5) = \frac{6}{36} = \frac{1}{6}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <div>✓✓ berekening 6 moontlikhede</div> <div>✓ waarskynlikheid</div> | (3)  |     |     |     |   |   |   |      |      |      |     |     |     |   |      |      |     |     |     |     |   |      |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |   |     |     |     |     |     |     |                                  |

|                  |                                                                                                                                                                                                                      |                                                                                       |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                  |                                                                                                                                                                                                                      |                                                                                       |
| Totaal: 7 punte  |                                                                                                                                                                                                                      |                                                                                       |
| <b>VRAAG 4</b>   |                                                                                                                                                                                                                      |                                                                                       |
| 4.1              | Grafiek B<br>Die werkverskaffer wil die indruk skep dat die salaris-aanpassings oor die tydperk groot is.                                                                                                            | √ grafiek<br>√√ verduideliking<br>(3)                                                 |
| 4.2              | Grafiek A<br>Die unie wil aantoon dat die salaris-aanpassings oor die tydperk minimaal is.                                                                                                                           | √ grafiek<br>√√ verduideliking<br>(3)                                                 |
| 4.3              | Die skale op die y-asse verskil.<br>In Grafiek A: 1eenheid = R 500<br>In Grafiek B: 1 eenheid = R 50                                                                                                                 | √√ verduideliking<br>√ afleiding<br>(3)                                               |
| Totaal: 9 punte  |                                                                                                                                                                                                                      |                                                                                       |
| <b>VRAAG 5</b>   |                                                                                                                                                                                                                      |                                                                                       |
| 5.1              | $F = \{1; 3; 5; 15\}$<br>$M = \{2; 4; 6; 8; 10; 12; 14; 16\}$<br>$U = \{1; 3; 5; 7; 9; 11; 13; 15\}$<br><br>$P(F \text{ en } U) = P(F) \cdot P(U) = \frac{4}{16} \times \frac{8}{16} = \frac{32}{256} = \frac{1}{8}$ | √ formule<br>√ substitusie<br>√ antwoord<br>(3)                                       |
| 5.2              | $P(M \text{ of } U) = P(M) + P(U) - P(M \text{ en } U)$<br>$= \frac{8}{16} + \frac{8}{16} - \frac{0}{16} = \frac{16}{16} = 1$                                                                                        | √ formule<br>√ $\frac{8}{16} + \frac{8}{16}$<br>√ $\frac{0}{16}$<br>√ antwoord<br>(4) |
| Totaal: 7 punte  |                                                                                                                                                                                                                      |                                                                                       |
| <b>VRAAG 6</b>   |                                                                                                                                                                                                                      |                                                                                       |
| 6.1              | Ja<br>James se definisie is nie voldoende nie want dit kan verwys na 'n rhombus of 'n vierkant.<br><br>George se definisie is nie voldoende nie want dit kan verwys na 'n vierkant of 'n reghoek.                    | √ antwoord ja<br><br>√ verduideliking- James<br><br>√ verduideliking-George<br>(3)    |
| 6.2.1            | 'n Vlieer                                                                                                                                                                                                            | √ vlieer<br>(1)                                                                       |
| 6.2.2            | 'n Vlieer is 'n vierhoek met twee duidelike aangrensende pare sye gelyk aan mekaar.                                                                                                                                  | √√√ definisie<br>(3)                                                                  |
| 6.3              | Nee<br>Anna se definisie sal 'n vlieer gee terwyl Raoul se definisie nie noodwendig 'n vlieer sal gee nie.                                                                                                           | √ nee<br><br>√ verduideliking<br>(2)                                                  |
| Totaal: 11 punte |                                                                                                                                                                                                                      |                                                                                       |

**TOTAAL: 50 punte**