



**NATIONAL
SENIOR CERTIFICATE/
NASIONALE
SENIORSERTIFIKAAT**

GRADE/GRAAD 11

NOVEMBER 2023

**MATHEMATICS P1/WISKUNDE V1
MARKING GUIDELINE/NASIENRIGLYN**

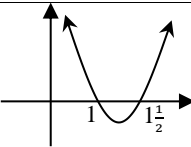
MARKS/PUNTE: 150

This marking guideline consists of 15 pages./
Hierdie nasienriglyn bestaan uit 15 bladsye.

NOTE/LET WEL:

- If a candidate answers a question TWICE, mark the FIRST attempt ONLY.
Indien 'n kandidaat 'n vraag TWEE keer beantwoord, merk SLEGS die EERSTE poging.
- Consistent accuracy (CA) applies in ALL aspects of the marking guideline.
Volgehoue akkuraatheid (VA) geld deurgaans in ALLE aspekte van die nasienriglyn.
- If a candidate crossed out an attempt of a question and did not redo the question, mark the crossed-out attempt.
Indien 'n kandidaat 'n poging vir 'n vraag deurgetrek het en nie die vraag weer beantwoord het nie, merk die poging wat deurgetrek is.
- The mark for substitution is awarded for substitution into the correct formula.
Die punt vir substitusie word toegeken vir substitusie in die korrekte formule.

QUESTION 1/VRAAG 1

1.1.1	$x^2 - 3x = 0$ $x(x - 3) = 0$ $\therefore x = 0$ or / of $x = 3$	✓ factorisation / faktorisering ✓ answers / antwoorde (2)
1.1.2	$x(3x + 1) = 5$ $3x^2 + x - 5 = 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $= \frac{-1 \pm \sqrt{1^2 - 4(3)(-5)}}{2(3)}$ $= \frac{-1 \pm \sqrt{61}}{6}$ $= 1,14$ or / of $-1,47$	✓ standard form / standaardvorm ✓ substitution / vervanging ✓ ✓ answers / antwoorde (4)
1.1.3	$2x^2 - 5x + 3 < 0$ $(2x - 3)(x - 1) < 0$ $\therefore 1 < x < 1\frac{1}{2}$	 ✓ factors / faktore ✓ ✓ answer / antwoord (A) (3)
1.1.4	$2\sqrt{x+2} = x - 1$ $(2\sqrt{x+2})^2 = (x - 1)^2$ $4(x + 2) = x^2 - 2x + 1$ $4x + 8 = x^2 - 2x + 1$ $x^2 - 6x - 7 = 0$ $(x - 7)(x + 1) = 0$ $\therefore x = 7$ or / of $x \neq -1$	✓ squaring / kwadreeer ✓ standard form / standaardvorm ✓ factors / faktore ✓ both answers / beide antwoorde ✓ selection / seleksie (5)

1.2	$x + 3y = 2 \quad (1)$ $x^2 - 3xy = 4 \quad (2)$ $x = 2 - 3y \quad (3)$ $(2 - 3y)^2 - 3y(2 - 3y) = 4$ $4 - 12y + 9y^2 - 6y + 9y^2 = 4$ $18y^2 - 18y = 0$ $18y(y - 1) = 0$ $\therefore y = 0 \text{ or / of } y = 1$ $\therefore x = 2 - 3(0) \quad \text{or / of} \quad x = 2 - 3(1)$ $= 2 \quad \quad \quad x = -1$ <p style="text-align: center;">OR/OF</p> $x + 3y = 2 \quad (1)$ $x^2 - 3xy = 4 \quad (2)$ $y = \frac{2 - x}{3} \quad (3)$ $x^2 - 3x\left(\frac{2 - x}{3}\right) = 4$ $x^2 - x(2 - x) = 4$ $x^2 - 2x + x^2 - 4 = 0$ $2x^2 - 2x - 4 = 0$ $x^2 - x - 2 = 0$ $(x - 2)(x + 1) = 0$ $\therefore x = 2 \text{ or / of } x = -1$ $\therefore y = \frac{2 - 2}{3} \quad \text{or / of} \quad y = \frac{2 - (-1)}{3}$ $= 0 \quad \quad \quad = 1$	 $\checkmark x = 2 - 3y$ \checkmark substitution / <i>vervanging</i> \checkmark standard form / <i>standaardvorm</i> \checkmark method/factors / <i>metode/faktore</i> \checkmark both y-values / <i>beide y-waardes</i> \checkmark both x-values / <i>beide x-waardes</i> <p style="text-align: center;">OR/OF</p> $\checkmark y = \frac{2 - x}{3}$ \checkmark substitution / <i>vervanging</i> \checkmark standard form / <i>standaardvorm</i> \checkmark factors / <i>faktore</i> \checkmark both x-values / <i>beide x-waardes</i> \checkmark both y-values / <i>beide y-waardes</i>
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(6)

1.3	$(x-3)^2 = p^2 - 4$ $\sqrt{(x-3)^2} = \pm\sqrt{p^2 - 4}$ $\therefore x-3 = \pm\sqrt{p^2 - 4}$ $\therefore x = 3 \pm \sqrt{p^2 - 4}$ <p>For non-real roots: Vir nie - reële wortels:</p> $p^2 - 4 < 0$ $(p-2)(p+2) < 0$ $\therefore -2 < p < 2$ <p style="text-align: center;">OR/OF</p> $(x-3)^2 = p^2 - 4$ $x^2 - 6x + 9 = p^2 - 4$ $x^2 - 6x + 13 - p^2 = 0$ <p>For non-real roots: Vir nie - reële wortels</p> $b^2 - 4ac < 0$ $(-6)^2 - 4(1)(13 - p^2) < 0$ $36 - 52 + 4p^2 < 0$ $\therefore 4p^2 - 16 < 0$ $(2p+4)(2p-4) < 0$ $\therefore -2 < p < 2$	<p>✓ square root / vierkantswortel</p> <p>✓ $x = 3 \pm \sqrt{p^2 - 4}$</p> <p>✓ $p^2 - 4 < 0$</p> <p>✓ factors / faktore</p> <p>✓ answer / antwoord</p> <p style="text-align: center;">OR/OF</p> <p>✓ expansion / uitbreiding</p> <p>✓ standard form / standaardvorm</p> <p>✓ $b^2 - 4ac < 0$</p> <p>✓ factors / faktore</p> <p>✓ answer / antwoord</p> <p style="text-align: right;">(5)</p> <p style="text-align: right;">[25]</p>
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QUESTION 2/VRAAG 2

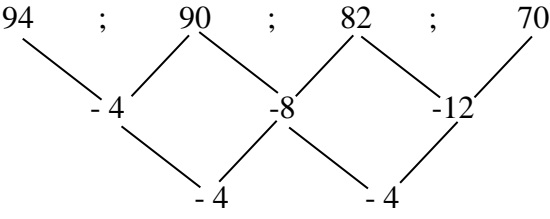
<p>2.1</p>	$\frac{2^{n+1} - 8 \cdot 2^{n-3}}{2^{n-2}} = \frac{2^n \cdot 2 - 8 \cdot 2^n \cdot 2^{-3}}{2^n \cdot 2^{-2}}$ $= \frac{2^n (2 - 8 \cdot 2^{-3})}{2^n \cdot 2^{-2}}$ $= \frac{2 - 1}{2^{-2}}$ $= 4$	<p>✓ numerator / teller ✓ denominator / noemer</p> <p>✓ factorisation / faktorisering</p> <p>✓ answer / antwoord</p> <p>(4)</p>
<p>2.2.1</p>	$\sqrt[3]{27} = 2187$ $27^{\frac{1}{x}} = 2187$ $(3^3)^{\frac{1}{x}} = 3^7 \quad \text{OR/OF} \quad 27^{x^{-1}} = 3^7$ $3^{\frac{3}{x}} = 3^7 \quad \quad \quad 3^{3x^{-1}} = 3^7$ $\therefore \frac{3}{x} = 7 \quad \quad \quad \therefore 3x^{-1} = 7$ $\Rightarrow x = \frac{3}{7} \quad \quad \quad x^{-1} = \frac{7}{3}$ $\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \Rightarrow x = \frac{3}{7}$	<p>✓ $27^{\frac{1}{x}} = 2187$</p> <p>✓ $(3^3)^{\frac{1}{x}} = 3^7 \quad \text{OR/OF} \quad 27^{x^{-1}} = 3^7$</p> <p>✓ equating exponents gelyk stel van eksponente</p> <p>✓ answer / antwoord</p> <p>(4)</p>
<p>2.2.2</p>	$4^x - 16 = 6 \cdot 2^x$ $(2^x)^2 - 6 \cdot 2^x - 16 = 0$ $(2^x - 8)(2^x + 2) = 0$ $\therefore 2^x = 8 \text{ or / of } 2^x \neq -2$ $\therefore 2^x = 2^3$ $\therefore x = 3$ <p style="text-align: center;">OR/OF</p> $4^x - 16 = 6 \cdot 2^x$ $(2^x)^2 = 6 \cdot 2^x - 16 = 0$ <p>Let/Laat $k = 2^x$,</p> $\therefore k^2 - 6k - 16 = 0$ $(k - 8)(k + 2) = 0$ $\therefore k = 8 \text{ or/of } k = -2$ $\therefore 2^x = 8 \text{ or/of } 2^x \neq -2$ $2^x = 2^3$ $\therefore x = 3$	<p>✓ standard form / standaardvorm</p> <p>✓ factors / faktore</p> <p>✓ selection / seleksie</p> <p>✓ $2^x = 2^3$</p> <p>✓ answer / antwoord</p> <p style="text-align: center;">OR/OF</p> <p>✓ standard form / standaardvorm</p> <p>✓ factors / faktore</p> <p>✓ selection / seleksie</p> <p>✓ $2^x = 2^3$</p> <p>✓ answer / antwoord</p> <p>(5)</p>

2.3	$\frac{x^2+1}{x^2-5} = \frac{(\sqrt{3}-2)^2+1}{(\sqrt{3}-2)^2-5}$ $= \frac{3-4\sqrt{3}+4+1}{3-4\sqrt{3}+4-5}$ $= \frac{8-4\sqrt{3}}{2-4\sqrt{3}}$ $= \frac{(8-4\sqrt{3})(2+4\sqrt{3})}{(2-4\sqrt{3})(2+4\sqrt{3})}$ $= \frac{16+32\sqrt{3}-8\sqrt{3}-16.3}{4-16.3}$ $= \frac{24\sqrt{3}-32}{-44}$ $= \frac{8-6\sqrt{3}}{11}$	<p>✓ substitution / <i>vervanging</i></p> <p>✓ $\frac{8-4\sqrt{3}}{2-4\sqrt{3}}$</p> <p>✓ rationalisation / <i>rasionalisering</i></p> <p>✓ simplification / <i>vereenvoudiging</i></p> <p>✓ answer / <i>antwoord</i></p> <p style="text-align: right;">(5)</p>
		[18]

QUESTION 3/VRAAG 3

3.1.1	$17 ; 14 ; 11 ; \dots ; -247$ $8 ; 5$	$\checkmark 8 \quad \checkmark 5$ (2)
3.1.2	$T_n = 20 - 3n$	$\checkmark 20 \quad \checkmark -3n$ (2)
3.1.3	$T_n = 20 - 3n$ $\therefore T_{17} = 20 - 3(17)$ $= -31$	\checkmark substitution / <i>vervanging</i> \checkmark answer / <i>antwoord</i> (2)
3.1.4	$T_n = 20 - 3n$ $-247 = 20 - 3n$ $-267 = -3n$ $\therefore n = 89$	$\checkmark T_n = -247$ \checkmark answer / <i>antwoord</i> (2)
3.2	$2x+11 ; 2 ; T_3 ; 2x-4$ $T_3 = \frac{2x-4-2}{2} + 2 \quad \text{OR / OF} \quad T_3 = \frac{2+2x-4}{2}$ $= \frac{2x-6}{2} + 2 \quad \quad \quad = \frac{2x-2}{2}$ $= x-3+2 \quad \quad \quad = x-1$ $= x-1$ $\therefore 2 - (2x+11) = (x-1) - 2$ $-2x-9 = x-3$ $-3x = 6$ $\therefore x = -2$ <p style="text-align: center;">OR/OF</p> $d = 2 - (2x+11)$ $= -2x-9$ $2d = 2x-4-2$ $d = x-3$ $\therefore -2x-9 = x-3$ $-3x = 6$ $x = -2$	\checkmark method / <i>metode</i> \checkmark simplifying / <i>vereenvoudiging</i> $\checkmark T_3 = x-1$ \checkmark equating / <i>gelykstel</i> \checkmark answer / <i>antwoord</i> <p style="text-align: center;">OR/OF</p> $\checkmark d = -2x-9$ $\checkmark 2d = 2x-4-2$ $\checkmark d = x-3$ \checkmark equating / <i>gelykstel</i> \checkmark answer / <i>antwoord</i> (5)
		[13]

QUESTION 4/VRAAG 4

4.1.1	 <p>54 ; 34</p>	<p>54 ✓ and/en 34 ✓</p> <p>(2)</p>
4.1.2	$2a = -4 \quad 3a + b = -4 \quad a + b + c = 94$ $\therefore a = -2 \quad 3(-2) + b = -4 \quad 2 - 2 + c = 94$ $b = 2 \quad c = 94$ $\therefore T_n = -2n^2 + 2n + 94$	<p>✓ $a = -2$ ✓ $b = 2$ ✓ $c = 94$</p> <p>✓ $T_n = -2n^2 + 2n + 94$</p> <p>(4)</p>
4.1.3	<p>First differences / Eerste verskille:</p> $t_n = -4n$ $\therefore -136 = -4n$ $\therefore n = 34$ $\therefore T_n = -2n^2 + 2n + 94$ $T_{34} = -2(34)^2 + 2(34) + 94$ $= -2150$ $\therefore T_{35} = -2(35)^2 + 2(35) + 94$ $= -2286$ <p style="text-align: center;">OR/OF</p> $T_{n+1} - T_n = -136$ $-2(n+1)^2 + 2(n+1) + 94 - (-2n^2 + 2n + 94) = -136$ $-2(n^2 + 2n + 1) + 2n + 2 + 94 + 2n^2 - 2n - 94 = -136$ $-2n^2 - 4n - 2 + 2n + 2 + 94 + 2n^2 - 2n - 94 = -136$ $\therefore -4n = -136$ $n = 34$ $n + 1 = 35$ $\therefore T_n = -2n^2 + 2n + 94$ $T_{34} = -2(34)^2 + 2(34) + 94$ $= -2150$ $\therefore T_{35} = -2(35)^2 + 2(35) + 94$ $= -2286$	<p>✓ method / metode</p> <p>✓ $n = 34$</p> <p>✓ $T_{34} = -2150$</p> <p>✓ $T_{35} = -2286$</p> <p style="text-align: center;">OR/OF</p> <p>✓ method / metode</p> <p>✓ $n = 34$</p> <p>✓ $T_{34} = -2150$</p> <p>✓ $T_{35} = -2286$</p> <p>(4)</p>

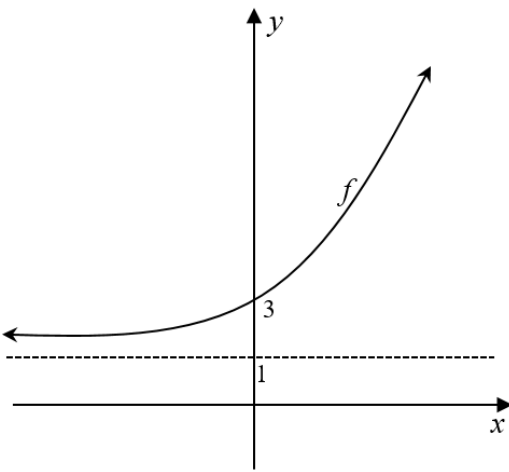
4.2	$T_n = an^2 + bn - 15$ $T_1 = a + b - 15$ $T_2 = 4a + 2b - 15$ $\therefore T_2 - T_1 = 3a + b = 3$ $T_3 = 9a + 3b - 15$ $T_3 - T_2 = 5a + b = 7$ $\therefore 5a + b = 7$ $3a + b = 3$ $2a = 4$ $\therefore a = 2$ $b = -3$	$\checkmark T_1$ and/en T_2 and/en T_3 $\checkmark 3a + b = 3$ $\checkmark 5a + b = 7$ \checkmark value for a / waarde van a \checkmark value for b / waarde van b (5)
[15]		

QUESTION 5/VRAAG 5

5.1	$p = 3$ $q = -1$	$\checkmark p = 3$ $\checkmark q = -1$ (2)
5.2	$f(x) = \frac{a}{x+p} + q$ $= \frac{a}{x+3} - 1$ $0 = \frac{a}{-5+3} - 1$ $1 = \frac{a}{-2}$ $\therefore a = -2$	\checkmark substituting for p and q vervanging vir p en q \checkmark substituting for x and y vervanging vir x en y \checkmark answer / antwoord (3)
5.3	$f(x) = \frac{a}{x+p} + q$ $= \frac{-2}{x+3} - 1$ $y = \frac{-2}{0+3} - 1$ $= -\frac{5}{2}$	\checkmark substituting $x = 0$ vervang $x = 0$ \checkmark answer / antwoord (2)
5.4	$x \in \mathbb{R}$, but/maar $x \neq -3$	$\checkmark x \in \mathbb{R}$ $\checkmark x \neq -3$ (2)
5.5	$y = -(x+3) - 1$ $= -x - 3 - 1$ $= -x - 4$	$\checkmark y = -(x+3) - 1$ \checkmark answer / antwoord (2)
5.6	$-5 \leq x < -3$	$\checkmark\checkmark$ answer / antwoord (A) (2)

5.7	f is reflected in the x -axis and then shifted 4 units to the right. f is gereflekteer in die x -as en dan 4 eenhede na regs geskuif.	<ul style="list-style-type: none"> ✓ reflected / gereflekteer ✓ x-axis / x-as ✓ 4 units / 4 eenhede ✓ right / regs 	(4)
			[17]

QUESTION 6/VRAAG 6

6.1	(0;3)	✓ answer / antwoord	(1)
6.2	$y = 1$	✓✓ answer / antwoord	(2)
6.3		<ul style="list-style-type: none"> ✓ y-intercept / y-afsnit ✓ asymptote / asimptoot ✓ shape (must be increasing) vorm (moet stygend wees) 	(3)
6.4	$y > -5$	✓✓ answer / antwoord (A)	(2)
			[8]

QUESTION 7/VRAAG 7

7.1	$x = \frac{1}{2}$	✓ answer / antwoord (1)
7.2	$x > \frac{1}{2}$	✓ answer / antwoord (1)
7.3	Average gradient / Gemiddelde gradiënt $= \frac{4 - 6}{-1 - 0}$ $= 2$	✓ method / metode ✓ answer / antwoord (2)
7.4	$g(x) = mx + q$ $m = \frac{y_2 - y_1}{x_2 - x_1}$ $= \frac{6 - 4}{1 - (-1)}$ $= 1$ $\therefore y = x + q$ $6 = 1 + q$ or / of $4 = -1 + q$ $\therefore q = 5$ $\therefore g(x) = x + 5$	✓ $m = 1$ ✓ substituting a point vervanging van 'n punt ✓ $q = 5$ (3)
7.5	$f(x) = ax^2 + bx + c$ $c = 6$ $\therefore f(x) = ax^2 + bx + 6$ $4 = a(-1)^2 + b(-1) + 6$ $6 = a(1)^2 + b(1) + 6$ $-2 = a - b$ $0 = a + b$ $2a = -2$ $\therefore a = -1$ $b = 1$ $\therefore f(x) = -x^2 + x + 6$	✓ $c = 6$ ✓ both substitutions / beide vervangings ✓ method / metode ✓ values of a and b waardes van a en b (4)

7.6	$g(x) = x + 5$ $0 = x + 5$ $\therefore x = -4$ $S(0; -4)$ $f(x) = -x^2 + x + 6$ $0 = -x^2 + x + 6$ $x^2 - x - 6 = 0$ $(x - 3)(x + 2) = 0$ $\therefore x = -2$ or / of $x = 3$ $\therefore U(3; 0)$ $\therefore SU = 3 - (-4)$ $= 7$ units/eenhede	\checkmark substitution / <i>vervanging</i> \checkmark $S(0; -4)$ \checkmark factors / <i>faktore</i> \checkmark both x -intercepts <i>beide x-afsnitte</i> \checkmark answer / <i>antwoord</i>
7.7	$x \leq -1$ or / of $x \geq 1$	\checkmark $x \leq -1$ \checkmark $x \geq 1$
7.8	$y_V - y_W = f(x) - g(x)$ $= (-x^2 + x + 6) - (x + 5)$ $= -x^2 + x + 5 - x - 5$ $= -x^2 + 1$ \therefore Max.length of VW is 1 unit <i>Maks. lengte van VW is 1 eenheid</i>	\checkmark $f(x) - g(x)$ \checkmark answer / <i>antwoord</i> \checkmark interpretation / <i>interpretasie</i>
		[21]

QUESTION 8/VRAAG 8

<p>8.1</p>	$i_{eff} + 1 = \left(1 + \frac{i_{nom}}{m}\right)^m$ $= \left(1 + \frac{0,093}{12}\right)^{12} - 1$ $= 0,09707$ $= 9,71\%$	<p>✓ formula / <i>formule</i></p> <p>✓ substitution / <i>vervanging</i></p> <p>✓ answer / <i>antwoord</i></p> <p>(3)</p>
<p>8.2</p>	$A = P(1+i)^n$ $= R312000(1+0,0691)^5$ $= R435\,758,88$	<p>✓ $n = 5$ ✓ substitution / <i>vervanging</i></p> <p>✓ answer / <i>antwoord</i></p> <p>(3)</p>
<p>8.3.1</p>	$A = \left(23000\left(1 + \frac{0,0925}{4}\right)^{12} + 13500\right)\left(1 + \frac{0,082}{12}\right)^{24}$ $= R51\,530,18$ <p style="text-align: center;">OR/OF</p> $A = \left(23000\left(1 + \frac{0,0925}{4}\right)^{12} + 13500\right)$ $= R43760,23$ $A = R43760,23\left(1 + \frac{0,082}{12}\right)^{24}$ $= R51530,18$	<p>✓ $i = \frac{0,0925}{4}$ and/en $n = 12$</p> <p>✓ $i = \frac{0,082}{12}$ and/en $n = 24$</p> <p>✓ $\left(23000\left(1 + \frac{0,0925}{4}\right)^{12} + 13500\right)$</p> <p>✓ $\left(1 + \frac{0,082}{12}\right)^{24}$</p> <p>✓ answer / <i>antwoord</i></p> <p style="text-align: center;">OR/OF</p> <p>✓ $i = \frac{0,0925}{4}$ and/en $n = 12$</p> <p>✓ $i = \frac{0,082}{12}$ and/en $n = 24$</p> <p>✓ $R51530,18$</p> <p>✓ $R43760,23\left(1 + \frac{0,082}{12}\right)^{24}$</p> <p>✓ answer / <i>antwoord</i></p> <p>(5)</p>
<p>8.3.2</p>	$A = P(1+i)^n$ $64487,24 = 51530,18\left(1 + \frac{i}{12}\right)^{36}$ $\therefore i = \left(\sqrt[36]{\frac{64487,24}{51530,18}} - 1\right) \times 12$ $= 0,075$ <p>rate/koers = 7,5%</p>	<p>✓ $\frac{i}{12}$ and/en $n = 36$</p> <p>✓ substituting / <i>vervang</i></p> <p>$A = R64487,24$</p> <p>✓ substituting into correct formula <i>vervanging in korrekte formule</i></p> <p>✓ answer / <i>antwoord</i></p> <p>(4)</p>
		<p>[15]</p>

QUESTION 9/VRAAG 9

9.1.1	<p>For mutually exclusive events: <i>Vir onderling uitsluitende gebeurtenisse:</i></p> $P(A \text{ or } B) = P(A) + P(B)$ $0,61 = 0,35 + P(B)$ $\therefore P(B) = 0,61 - 0,35$ $= 0,26$	<p>✓ formula / formule</p> <p>✓ substitution / vervanging</p> <p>✓ answer / antwoord</p> <p>(3)</p>																
9.1.2	<p>For independent events: <i>Vir onafhanklike gebeurtenisse:</i></p> $P(A \text{ or/of } B) = P(A) + P(B) - P(A \text{ and/en } B)$ $0,61 = 0,35 + P(B) - P(A).P(B)$ $0,61 = 0,35 + P(B) - 0,35 \times P(B)$ $0,61 = 0,35 + 0,65 \times P(B)$ $\therefore 0,65 \times P(B) = 0,26$ $\therefore P(B) = \frac{0,26}{0,65}$ $= 0,4$	<p>✓ formula / formule</p> <p>✓ substitution / vervanging</p> <p>✓ $0,61 = 0,35 + P(B) - 0,35 \times P(B)$</p> <p>✓ answer / antwoord</p> <p>(4)</p>																
	<table border="1" data-bbox="268 1088 903 1211"> <thead> <tr> <th></th> <th>Axis Phones</th> <th>Direct Phones</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Defective</td> <td>58</td> <td>a</td> <td>b</td> </tr> <tr> <td>Not Defective</td> <td>326</td> <td>188</td> <td>514</td> </tr> <tr> <td>Total</td> <td>384</td> <td>c</td> <td>600</td> </tr> </tbody> </table>		Axis Phones	Direct Phones	Total	Defective	58	a	b	Not Defective	326	188	514	Total	384	c	600	
	Axis Phones	Direct Phones	Total															
Defective	58	a	b															
Not Defective	326	188	514															
Total	384	c	600															
9.2.1	$a = 28, b = 86, c = 216$	<p>✓ $a = 28$ ✓ $b = 86$ ✓ $c = 216$</p> <p>(3)</p>																
9.2.2	$\frac{216}{600} = \frac{9}{25}$ or / of 0,36	<p>✓ answer / antwoord</p> <p>(1)</p>																
9.2.3	<p>$P(\text{not defective}) + P(\text{Axisphones and defective})$ $P(\text{nie foutief}) + P(\text{Axis Phones en foutief})$</p> $= \frac{514}{600} + \frac{58}{600}$ $= \frac{572}{600} = \frac{143}{150} \text{ or/of } 0,95$	<p>✓ $\frac{514}{600}$ ✓ $+$ $\frac{58}{600}$</p> <p>✓ answer / antwoord</p> <p>(3)</p>																
		[14]																

QUESTION 10/VRAAG 10

<p>10.1</p>		<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>CA only if proper fractions are used and -1 for 2nd pick VA slegs as egte breuke gebruik word en -1 vir tweede keuse.</p> </div>
	$P(GG) = P(G) \times P(G)$ $= \frac{x-5}{x} \times \frac{x-6}{x-1}$ $\therefore \frac{x-5}{x} \times \frac{x-6}{x-1} = \frac{3}{11}$ $11(x-5)(x-6) = 3x(x-1)$ $11(x^2 - 11x + 30) = 3x^2 - 3x$ $11x^2 - 121x + 330 = 3x^2 - 3x$ $8x^2 - 118x + 330 = 0$ $4x^2 - 59x + 165 = 0$	<ul style="list-style-type: none"> ✓ $\frac{x-5}{x} \times \frac{x-6}{x-1}$ ✓ equating to $\frac{3}{11}$ / stel gelyk aan $\frac{3}{11}$ ✓ getting rid of fractions raak ontslae van breuke ✓ standard form / standaardvorm <p style="text-align: right;">[4]</p>
	<p>TOTAL/TOTAAL: 150</p>	