Province of the
EASTERN CAPE
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo
Provinsie van die Oos Kaap: Department van Onderwys
Porafensie Ya Kapa Botjahabela: Lefapha la Thuto

NATIONAL SENIOR CERTIFICATE/ NASIONALE SENIOR SERTIFIKAAT

GRADE/GRAAD 11

NOVEMBER 2025

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

MARKS/*PUNTE*: **150**

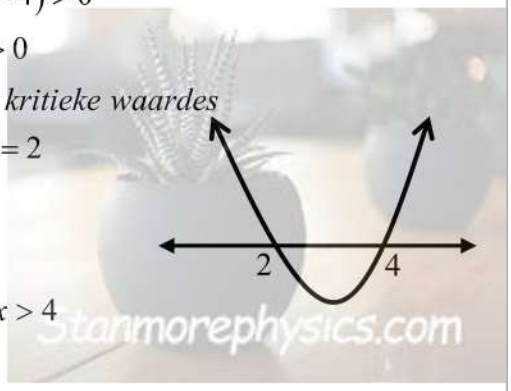
This marking guideline consists of 21 pages.
Hierdie nasienriglyn bestaan uit 21 bladsye.

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 applies in ALL aspects of the marking guideline.
  Volgehoue akkuraatheid 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/*VRAAG 1*

1.1.1	$x(2x+6)=0$ $x=0$ or/*of* $2x+6=0$ $x=0$ or/*of* $x=-3$	✓ $x=0$ ✓ $x=-3$ (2)
1.1.2	$4x^2+3x-9=0$ $x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ $x=\frac{-3\pm\sqrt{(3)^2-4(4)(-9)}}{2(4)}$ $x=\frac{-3\pm\sqrt{153}}{8}$ $\therefore x=1{,}17$ or/*of* $x=-1{,}92$	Penalise 1 mark for incorrect rounding off./ *Penaliseer 1 punt vir verkeerde afronding.* ✓ standard form / *standaardvorm* ✓ substitution / *vervanging* ✓ $x=1{,}17$ or/*of* ✓ $x=-1{,}92$ (4)

1.1.3	$x(x-4)+2(4-x)>0$ $x(x-4)-2(x-4)>0$ $(x-4)(x-2)>0$ critical values / *kritieke waardes* $x=4$ or / *of* $x=2$  $x<2$ or / *of* $x>4$	✓ $-2(x-4)$ ✓ critical values / *kritieke waardes* ✓✓ $x<2$ *or* $x>4$ (accuracy / *akkuraatheid*) (4)
1.1.4 (a)	$x+14\geq 0$; $x\neq -2$ $x\geq -14$	✓ $x\geq -14$ ✓ $x\neq -2$ (2)
(b)	$\frac{\sqrt{x+14}}{x+2}=1$ $\sqrt{x+14}=x+2$ $x+14=x^2+4x+4$ $x^2+3x-10=0$ $(x+5)(x-2)=0$ $x\neq -5$ *or* / *of* $x=2$	✓ isolating surd / *isoleer wortelvorm* ✓ square both sides / *kwadreer beide kante* ✓ factors / *faktore* ✓ answer with choice / *antwoord met keuse* (–5 excluded / *uitgesluit*) (4)

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1.2	$x-3y=1$.....(1) $x^2-2xy+9y^2=17$.....(2) *From / Vanaf* (1): $x=3y+1$ .....(3) (3) into/*in* (2): $(3y+1)^2-2y(3y+1)+9y^2=17$ $9y^2+6y+1-6y^2-2y+9y^2-17=0$ $12y^2+4y-16=0$ $3y^2+y-4=0$ $(y-1)(3y+4)=0$ $y=1$ or/*of* $y=-\frac{4}{3}$ $x=4$ or/*of* $x=-3$	✓ $x=3y+1$ ✓ substitution / *vervanging* ✓ standard form / *standaardvorm* ✓ factors / *faktore* ✓ y values / *y-waardes* ✓ x values / *x-waardes* (6)
1.3	$1+\dfrac{10}{1+\dfrac{1}{1+\dfrac{1}{x}}}=7$ $1+\dfrac{10}{1+\dfrac{1}{\dfrac{x+1}{x}}}=7$ $1+\dfrac{10}{1+\dfrac{x}{x+1}}=7$ $1+\dfrac{10}{\dfrac{x+1+x}{x+1}}=7$ $1+\dfrac{10}{\dfrac{2x+1}{x+1}}=7$ $1+\dfrac{10(x+1)}{2x+1}=7$ $\dfrac{2x+1+10x+10}{2x+1}=7$ $\dfrac{12x+11}{2x+1}=7$ $12x+11=14x+7$ $2x=4$ $x=2$	✓ $\dfrac{1}{\dfrac{x+1}{x}}$ ✓ $\dfrac{x+1}{x}$ ✓ $\dfrac{2x+1}{x+1}$ ✓ $\dfrac{2x+1+10x+10}{2x+1}$ ✓ answer / *antwoord* (5)

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QUESTION/*VRAAG 2*

2.1	$\dfrac{125^x.\sqrt{5^{4x-2}}}{\sqrt[3]{5^{12x+6}}.5^x}$ $=\dfrac{5^{3x}.5^{2x-1}}{5^{4x+2}.5^x}$ $=5^{3x-x+2x-1-4x-2}$ $=5^{-3}$ $=\dfrac{1}{125}$	✓ $125^x=3^{3x}$ ✓ $\sqrt{5^{4x-2}}=5^{2x-1}$ and/*en* $\sqrt[3]{5^{12x+6}}=5^{4x+2}$ ✓ $5^{3x+2x-1-4x-2-x}$ ✓ answer / *antwoord* (4)
2.2.1	$6x^{\frac{3}{2}}=48$ $x^{\frac{3}{2}}=8$ $x=\left(2^3\right)^{\frac{2}{3}}$ $x=2^2$ $x=4$	✓ dividing by 6 / *deel deur* 6 ✓ raising by reciprocal *verhef tot omgekeerde/resiprook* ✓ answer / *antwoord* (3)
2.2.2	$\left(x^{\frac{1}{4}}\right)^2-3x^{\frac{1}{4}}+2=0$ let/*laat* : $k=x^{\frac{1}{4}}$ $k^2-3x+2=0$ $(k-2)(k-1)=0$ **OR /OF** $\left(x^{\frac{1}{4}}-2\right)\left(x^{\frac{1}{4}}-1\right)$ $k=2$ or/*of* $k=1$ $x^{\frac{1}{4}}=2$ or/*of* $x^{\frac{1}{4}}=1$ $x=16$ or/*of* $x=1$	✓ $\left(x^{\frac{1}{4}}\right)^2$ ✓ factors / *faktore* ✓ $x^{\frac{1}{4}}=2$ or/*of* $x^{\frac{1}{4}}=1$ ✓ answers / *antwoord* (4)

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2.3	$A = L \times B$ $16^x - 100 = L \times \left(4^x + 10\right)$ $L = \dfrac{\left(4^x\right)^2 - 100}{4^x + 10}$ $L = \dfrac{\left(4^x - 10\right)\left(4^x + 10\right)}{4^x + 10}$ $L = 4^x - 10$ $\therefore$ Length $= 4^x - 10$	✓ substitution into area formula *vervanging in oppervlakte formule* ✓ $16^x = \left(4^x\right)^2$ ✓ factors of difference of 2 squares *faktore van verskil tussen 2 kwadrate* ✓ answer / *antwoord* (4)
2.4	Smaller integer / *Kleiner heelgetal* $= x$ next consecutive integer / *opeenvolgende heelgetal* $= x + 1$ Difference / *Verskil* : $\left(x+1\right)^2 - x^2 = 45$ $x^2 + 2x + 1 - x^2 = 45$ $2x = 44$ $x = 22$ $\therefore \left(22 + 23\right)^2 = 2025$	✓ difference / *verskil* ✓ equating the difference to 45 *stel verskil gelyk aan* 45 ✓ $x = 22$ ✓ (sum)^2 / (*som*)$^2 = 2025$ (4)
		[19]

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QUESTION/*VRAAG 3*

3.1.1	$d=-0,5$ $4\ ;\ 3,5$	✓ 4 ✓ 3,5 (2)
3.1.2	$T_n=-0,5n+6$	✓ $-0,5n$ ✓ $+6$ (2)
3.1.3	$-\frac{1}{2}n+6<-113,5$ $-0,5n<119,5$ $n>239$ $n=240$	✓ $-\frac{1}{2}n+6<-113,5$ ✓ answer / *antwoord* (2)
3.2.1	$d=5$ $T_n=5n+c$ but / *maar*: $T_{38}=192$ $192=5(38)+c$ $c=2$ $T_1=5(1)+2=7$ ∴ First term is 7 / *Eerste term is* 7	✓ $T_n=5n+c$ ✓ substitution / *vervanging* ✓ answer / *antwoord* (3)
		[9]

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QUESTION/*VRAAG 4*

4.1.1	$T_n = n^2 - 12n + k$ $3132 = (62)^2 - 12(62) + k$ $k = 32$	✓ substitution / *vervanging* ✓ answer / *antwoord* (2)
4.1.2	Terms of the quadratic number pattern: *Terme van die kwadratiese patroon*: $T_1 = (1)^2 - 12(1) + 32 = 21$ $T_2 = (2)^2 - 12(2) + 32 = 12$ $T_3 = (3)^2 - 12(3) + 32 = 5$ Terms of the first difference: *Terme van eerste verskille*: $-9 \quad ; \quad -7 \quad ; \quad -5$	✓ terms of quadratic number pattern / *terme van kwadratiese getalpatroon* ✓ answer / *antwoord* (2)
4.1.3	$T_n = n^2 - 12n + 32$ $n = \frac{-(-12)}{2(1)} = 6$	✓ method / *metode* ✓ answer / *antwoord* (2)
4.1.4	$T_{n-1} = (n-1)^2 - 12(n-1) + 32$ $= n^2 - 2n + 1 - 12n + 12 + 32$ $= n^2 - 14n + 45$	✓ simplification / *vereenvoudiging* ✓ answer / *antwoord* (2)

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4.1.5	$T_n - T_{n-1} = 149$ $n^2 - 12n + 32 - n^2 + 14n - 45 = 149$ $149 = 2n - 13$ $n = 81$ consecutive terms are 80 and 81 / *opeenvolgende terme is* 80 *en* 81 **OR / *OF*** $T_n = 2n - 11$ $149 = 2n - 11$ $160 = 2n$ $n = 80$ consecutive terms are 80 and 81 / *opeenvolgende terme is* 80 *en* 81	✓ $T_n - T_{n-1} = 149$ ✓ simplification / *vereenvoudiging* ✓ answer / *antwoord* (3) **OR/*OF*** ✓ $T_n = 2n - 11$ ✓ equating T_n to 149 ✓ answer / *antwoord* (3)
4.2	x 4 $3x$ 18 $4 - x$ $3x - 4$ $18 - 3x$ $4x - 8$ $-6x + 22$ $4x - 8 = -6x + 22$ $10x = 30$ $x = 3$ $\therefore\ T_3 = 9$	✓ 2nd diff i.t.o x / *2de versk. i.t.v* x ✓ equating / *gelykstelling* ✓ answer / *antwoord* (3)
		[14]

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QUESTION/*VRAAG 5*

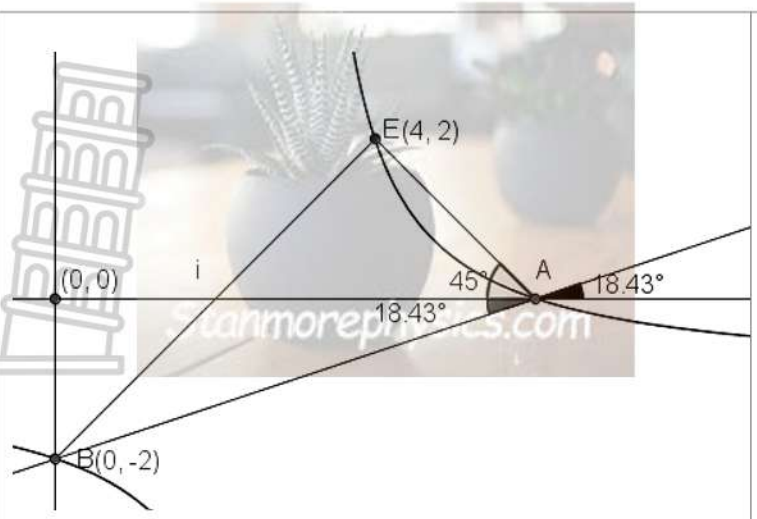
5.1	$p=-3$	✓ answer / *antwoord* (1)
5.2	$f(x)=\frac{a}{x-3}-1$ Subst. / *Vervang*: $(4;2)$ $2=\frac{a}{4-3}-1$ $a=3$ $f(x)=\frac{3}{x-3}-1$	✓ $f(x)=\frac{a}{x-3}-1$ ✓ substitution of $(4;2)$ / *vervanging van* $(4;2)$ ✓ equation of f / *vergelyking van* f (3)
5.3	$g(x)=\frac{x}{3}+c$ $-1=\frac{3}{3}+c$ $c=-2$ $\therefore \text{B}(0\ ;-2)$ $0=\frac{x}{3}-2$ $2=\frac{x}{3}$ $x=6$ $\therefore \text{A}(6\ ;0)$ **OR/*OF*** $f(0)=-2$ $\text{B}(0\ ;-2)$ $0=\frac{3}{x-3}-1$ $1=\frac{3}{x-3}$ $x-3=3$ $x=6$ $\therefore\ \text{A}(6\ ;0)$	✓ coordinates of B / *koördinate van* B ✓ $g(x)=0$ ✓ coordinates of A / *koördinate van* A (3) **OR/*OF*** ✓ coordinates of B / *koördinate van* B ✓ $f(x)=0$ ✓ coordinates of A / *koördinate van* A (3)

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5.4	$-(x-4)+3=0$ $-x+4-3=0$ $-x+1=0$ $x-1=0$ V.A: $x=1$ Domain / *Gebied*: $x \in \mathbf{R}; x \neq 1$ **OR / *OF*** $h(x)=\dfrac{3}{-(x-4)-3}-1$ $=\dfrac{3}{-x+4-3}$ $=\dfrac{3}{-(x-1)}-1$ $=\dfrac{-3}{x-1}-1$ Domain / *Gebied*: $x \in \mathbf{R}; x \neq 1$	✓ replacing x by $-(x-4)$ *vervang x met* $-(x-4)$ ✓ $x-1=0$ / $x=1$ ✓ answer / *antwoord* (3) **OR/*OF*** ✓ replacing x by $-(x-4)$ *vervang x met* $-(x-4)$ ✓ denominator / *noemer*: $(x-1)$ ✓ answer / *antwoord* (3)
5.5	$x>3, x \neq 6$ **OR / *OF*** $3<x<6$ or/*of* $x>6$	✓✓ answer / *antwoord* (2)

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5.6.1



$m_{AB} = \frac{1}{3}$

$\therefore \theta = 18,43°$

$\therefore \text{B}\hat{\text{O}}\text{A} = 18,43°$ (Vert. opp ∠'s / *Regoorstaande* ∠e)

$m_{EA} = \frac{0-2}{6-4} = -1$

Ref.∠ / *Verwys..*∠ : $\text{E}\hat{\text{A}}\text{O} = 45°$

$\therefore\ \text{E}\hat{\text{A}}\text{B} = 63,43°$

$\text{EA} = \sqrt{(4-6)^2 + (2-0)^2}$

$= 2\sqrt{2}$

$\text{Area of } \Delta\text{ABE} = \frac{1}{2} \times \text{EA} \times \text{AB} \times \sin \text{E}\hat{\text{A}}\text{B}$

$= \frac{1}{2} \times \left(2\sqrt{2}\right) \times \left(2\sqrt{10}\right) \sin 63,43°$

$= 8 \text{ units}^2$ / *eenhede*^{2}

✓ m_{AB} and/*en* m_{EA}

✓ Length of EA / *Lengte van* EA

✓ $18,43°$ and/*en* $45°$

✓ substitution in the area formula / *vervanging in die oppervlakte formule*

✓ answer / *antwoord*

(5)

[17]

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QUESTION/*VRAAG 6*

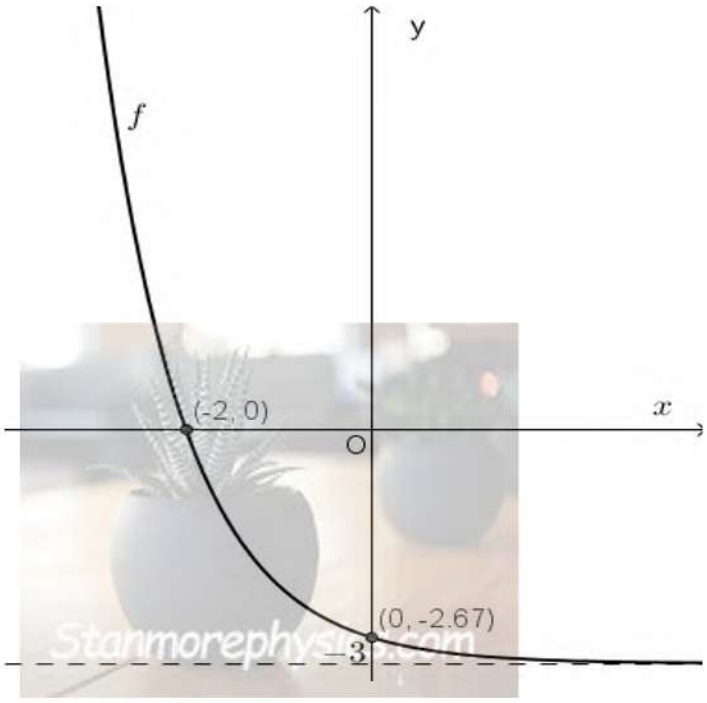
6.1	$a=-1$ $x=\frac{6}{-2}=-3$ $f(-3)=-(1)^2-6(-3)=9$ $f(x)=-(x+3)^2+9$ **OR / *OF*** $f(x)=-x^2-6x$ $=-\left(x^2+6x\right)$ $=-\left(x^2+6x+(3)^2-(3)^2\right)$ $=-\left((x+3)^2-9\right)$ $=-(x+3)^2+9$	✓ value of *a / waarde van a* ✓ $x=-3$ and / *en* $y=9$ ✓ equation in T.P-form / *Vergelyking in DP-vorm* (3) **OR/*OF*** ✓ common factor –1 / *gemene faktor* –1 ✓ completing the square $\pm(3)^2$ / *voltooing van vierkant* $\pm(3)^2$ ✓ equation in T.P-form / *vergelyking in DP-vorm* (3)
6.2	$x_{TP}=-3$ $\frac{x_B+x_A}{2}=x_{TP}$ $\frac{-5+x_A}{2}=-3$ $-6=-5+x_A$ $x_A=-1$ $f(-1)=-(-1)^2-6(-1)=5$ $\therefore A(-1;5)$	✓ $x=-3$ ✓ $x_A=-1$ ✓ $f(-1)$ (3)

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6.3	$g(x) = x^2 + 6x$ $CD = g(x) - f(x)$ $14 = x^2 + 6x - (-x^2 - 6x)$ $14 = 2x^2 + 12x$ $2x^2 + 12x - 14 = 0$ $x^2 + 6x - 7 = 0$ $(x+7)(x-1) = 0$ $x = -7$ or / *of* $x = 1$ $\therefore x = -7$ $\therefore$ OE = 7 units / *eenhede*	✓ $g(x)$ ✓ $g(x) - f(x)$ ✓ standard form / *standaardvorm* ✓ both $x-$ values / *beide x-waardes* ✓ answer / *antwoord* (5)
6.4.1	$k < -9$	✓✓ answer / *antwoord* (2)
6.4.2	$-x^2 - 6x = 0$ $x^2 + 6x = 0$ $x(x+6) = 0$ $x = 0$ or / *of* $x = -6$ $\therefore \quad -6 < k < 0$	✓ $x-$values / *x-waardes* ✓✓ answer / *antwoord* (3)
		[16]

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QUESTION/*VRAAG 7*

7.1.1	$y=-3$	✓ answer / *antwoord* (1)
7.1.2	$\left(\frac{1}{3}\right)^{x+1}-3=0$ $3=\left(\frac{1}{3}\right)^{x+1}$ $\left(\frac{1}{3}\right)^{-1}=\left(\frac{1}{3}\right)^{x+1}$ *OR / OF* $3^1=3^{-x-1}$ $x+1=-1$ $x=-2$ $y=\left(\frac{1}{3}\right)^{0+1}-3$ $=-\frac{8}{3}\approx -2,7$	✓ $f(x)=0$ ✓ $x=-2$ ✓ $y=-\frac{8}{3}$ (3)
7.1.3		✓ shape / *vorm* ✓ x and y intercepts / *x- en y-afsnitte* ✓ asymptote / *asimptoot*

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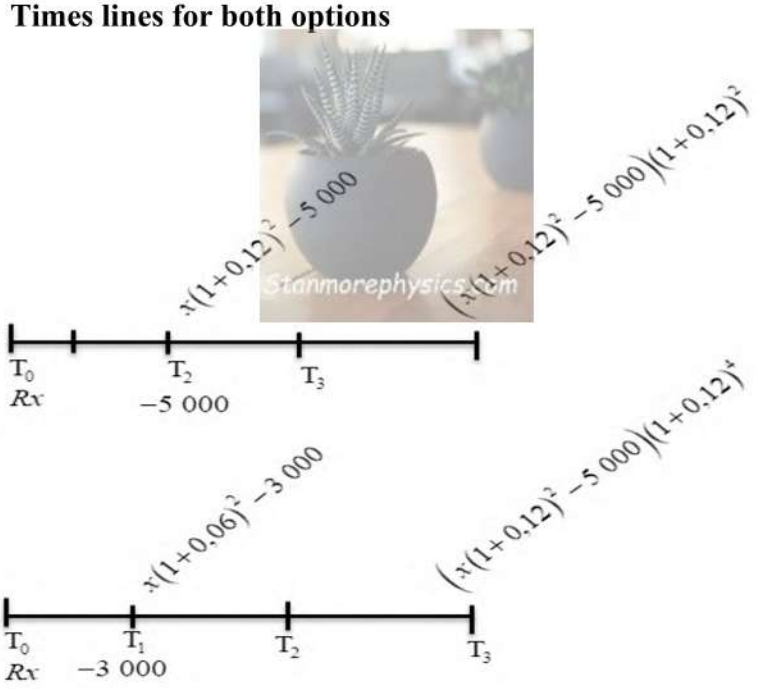
7.1.4	$x \leq -2$	✓✓ answer / *antwoord* (2)
7.2	$y = a.k^x + r$ $y = a.k^x - 2$ Subst./*Vervang*: $(0\ ;\ 0)$ $0 = a.k^0 - 2$ $2 = a$ $6 = 2k^2 - 2$ $8 = 2k^2$ $4 = k^2$ $k = \pm 2$ $\therefore k = 2 \quad ; k > 0$ $h(x) = 2.2^x - 2$	✓ $y = a.k^x - 2$ ✓ $a = 2$ ✓ substitution of $(2;6)$ / *vervanging van* $(2;6)$ ✓ equation h / *vergelyking h* (4)
		[13]

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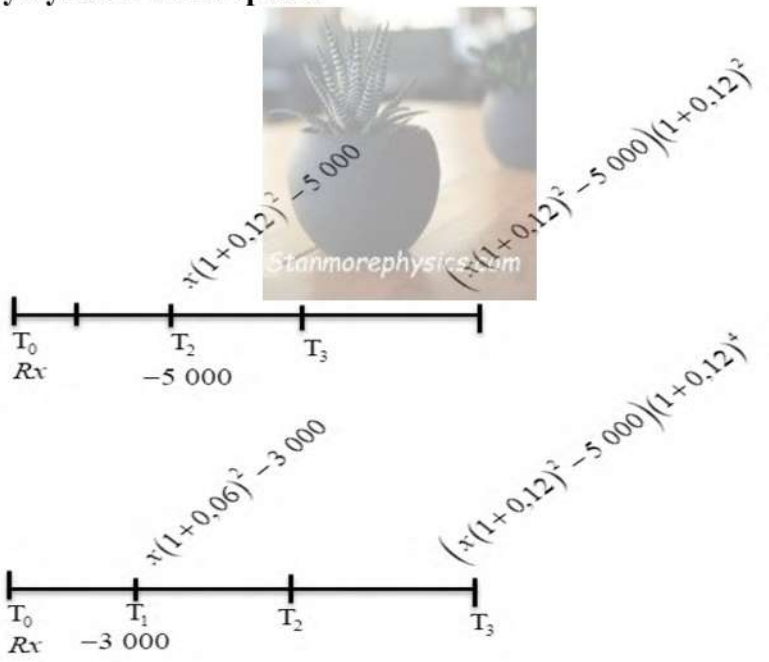
QUESTION/*VRAAG 8*

8.1	$A = P(1-i)^n$ $= 250\,000(1-13\%)^6$ $= R108\,406,55$	✓ $i = 6$ ✓ substitution / *vervanging* ✓ answer / *antwoord* (3)
8.2	$1+7,5\% = \left(1+\frac{i_{nom}}{4}\right)^n$ $\sqrt[4]{\frac{43}{40}} = \left(1+\frac{i_{nom}}{4}\right)$ $\sqrt[4]{\frac{43}{40}} - 1 = \frac{i_{nom}}{4}$ $i_{nom} = 4\left(\sqrt[4]{\frac{43}{40}} - 1\right)$ $i_{nom} = 0,07297.....$ $i_{rate} = 7,30\%$	✓ substitution / *vervanging* ✓ i_{nom} subject of equation / i_{nom} *onderwerp van formule* ✓ i_{rate} (3)
8.3	$A = \left(25\,000\left(1+\frac{4\%}{12}\right)^{24} + 10\,000\right)\left(1+\frac{7\%}{2}\right)^6 - 5000\left(1+\frac{7\%}{2}\right)^2$ $A = R40\,222,91$ **OR / *OF*** $A = \left(\left(25\,000\left(1+\frac{4\%}{12}\right)^{24} + 10000\right)\left(1+\frac{7\%}{2}\right)^4 - 5000\right)\left(1+\frac{7\%}{2}\right)^2$ $A = R40\,222,91$	✓ $n = 24$; 6 and / *en* 2 ✓ $25\,000\left(1+\frac{4\%}{12}\right)^{24}$ ✓ +10000 to $25\,000\left(1+\frac{4\%}{12}\right)^{24}$ ✓ subtracting 5000 with its interest / *aftrekking van* 5000 *met rente* ✓ answer / *antwoord* (5) **OR/*OF*** ✓ $n = 24$; 4 and/*en* 2 ✓ $25\,000\left(1+\frac{4\%}{12}\right)^{24}$ ✓ +10000 to $25\,000\left(1+\frac{4\%}{12}\right)^{24}$ ✓ $P\left(1+\frac{7\%}{2}\right)^2$ ✓ answer / *antwoord* (5)

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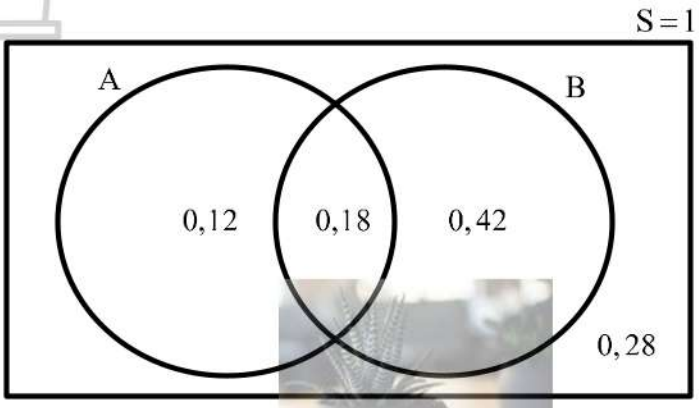
8.4	**Option 1 : annual compounding** * Amount after 2 years: $x(1+0,12)^2$ *Brian pays 5 000, leaving : $x(1+0,12)^2-5\,000$ *Amount after another 2 years: $\left(x(1+0,12)^2-5\,000\right)(1+0,12)^2$ **Option 2 : semi - annual compounding** * Amount after 1 year: $x(1+0,06)^2$ *Brian pays 3 000, leaving : $x(1+0,06)^2-3\,000$ *Amount after another 2 years: $\left(x(1+0,06)^2-3\,000\right)(1+0,06)^4$ **Times lines for both options**  	✓ $x(1+0,12)^2-5\,000$ and/en $x(1+0,06)^2-3\,000$ ✓ $\left(x(1+0,12)^2-5\,000\right)(1+0,12)^2$ ✓ $\left(x(1+0,06)^2-3\,000\right)(1+0,06)^4$
	$\left(x(1+0,12)^2-5000\right)(1+0,12)^2=\left(x(1+0,06)^2-3000\right)(1+0,06)^4$ $\left(x(1,12)^2-5000\right)(1,12)^2=\left(x(1,06)^2-3000\right)(1,06)^4$ $x(1.12)^4-5000(1,12)^2=x(1,06)^6-3000(1,06)^4$ $-5000(1,12)^2+3000(1,06)^4=x(1,06)^6-x(1,12)^4$ $-2484,56912=-0,1550002477x$ $x=R16\,029,45$	✓ equating both options / *gelykstel van opsies* ✓ distribution by / *uitbreiding* $(1,12)^2$ and / *en* $(1,06)^2$ ✓ answer /*antwoord* (6)
		[17]

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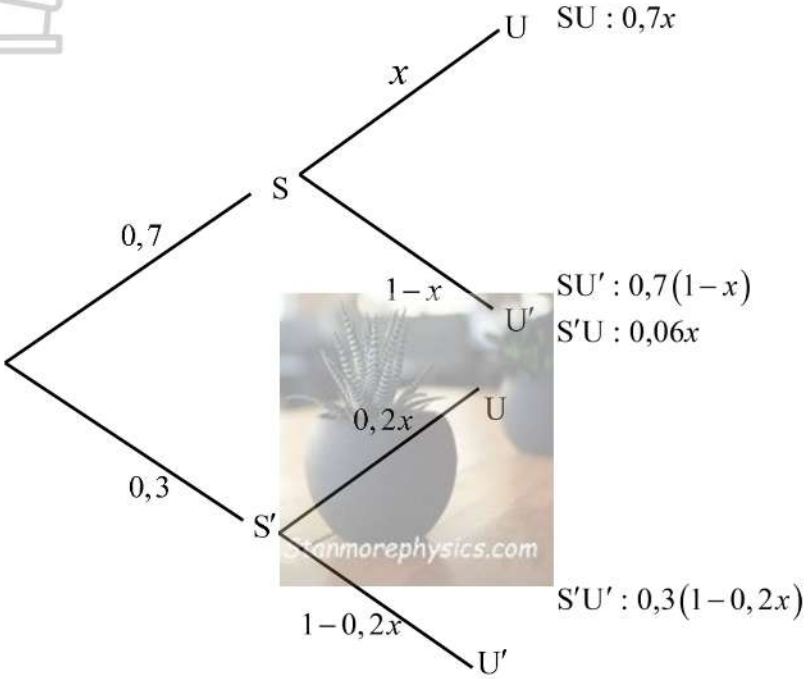
	Opsie 1 : jaarliks saamgestel * Bedrag na 2 jaar: $x(1+0,12)^2$ *Brian betaal 5 000, dit laat: $x(1+0,12)^2-5\,000$ *Bedrag na 'n verdere 2 jaar: $\left(x(1+0,12)^2-5\,000\right)(1+0,12)^2$ **Opsie 2 : half - jaarliks saamgestel** * Bedrag na 1 jaar: $x(1+0,06)^2$ *Brian betaal 3 000, dit laat : $x(1+0,06)^2-3\,000$ *Bedrag na 'n verdere 2 jaar: $\left(x(1+0,06)^2-3\,000\right)(1+0,06)^4$ **Tydlyne vir beide opsies:**  	✓ $x(1+0,12)^2-5\,000$ and/en $x(1+0,06)^2-3\,000$ ✓ $\left(x(1+0,12)^2-5\,000\right)(1+0,12)^2$ ✓ $\left(x(1+0,06)^2-3\,000\right)(1+0,06)^4$
	$\left(x(1+0,12)^2-5000\right)(1+0,12)^2=\left(x(1+0,06)^2-3000\right)(1+0,06)^4$ $\left(x(1,12)^2-5000\right)(1,12)^2=\left(x(1,06)^2-3000\right)(1,06)^4$ $x(1.12)^4-5000(1,12)^2=x(1,06)^6-3000(1,06)^4$ $-5000(1,12)^2+3000(1,06)^4=x(1,06)^6-x(1,12)^4$ $-2484,56912=-0,1550002477x$ $x=R16\,029,45$	✓ equating both options / *gelykstel van opsies* ✓ distribution by / *uitbreiding* $(1,12)^2$ and / *en* $(1,06)^2$ ✓ answer /*antwoord* (6)
		[17]

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QUESTION/*VRAAG 9*

9.1.1	NO / *NEE* $P(A) \times P(B) = 0,3 \times 0,6$ $= 0,18$ $\therefore P(A \text{ and / } en \text{ } B) = 0,18 \neq 0$	✓ NO / *NEE* ✓ valid reason / *geldige rede* (2)
9.1.2		✓ 0,18 ✓ 0,12 and/*en* 0,42 ✓ 0,28 (3)
9.1.3	$P(\text{not A and not B}) = P[\text{not}(\text{A or B})] = 0,28$ *P(nie A en nie B) = [nie(A of B)] = 0,28*	✓✓ answer / *antwoord* (2)
9.2.1	$\frac{42}{106} = \frac{21}{53}$	✓ answer / *antwoord* (1)
9.2.2	$P(\text{Enjoy jogging/Geniet draf}) = \frac{56}{106}$ $P(\text{Male/Manlik}) = \frac{42}{106}$ $P(\text{Enjoy jogging/Geniet draf}) \times P(\text{Male/Manlik}) = \frac{56}{106} \times \frac{42}{106}$ $= 0,20932...$ $P(\text{Enjoy jogging and Male/Geniet draf en Manlik}) = \frac{26}{106}$ $= 0,24528...$ $\therefore P(\text{Enjoy jogging and Male/Geniet draf en Manlik})$ $\neq P(\text{Enjoy jogging/Geniet draf}) \times P(\text{Male/Manlik})$ ∴ Events are not independent. / Gebeurtenisse is nie *onafhanklik nie.*	✓ $P(\text{Enjoy jogging}) \times P(\text{Male})$ / P (Geniet draf) x P (Manlik) ✓ answer / antwoord ✓ $P(\text{Enjoy jogging and Male})$ / P (Geniet draf en Manlik) ✓ conclusion / slotsom (4)

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9.3.1	Sunny / Sonnig - S Not Sunny / Nie Sonnig nie - S′ Use Sunscreen / Gebruik Sonskerm - U Not using Sunscreen / Gebruik nie sonskerm nie - U′  	✓ First branches i.e. S and S′ / Eerste takke dws S en S′ ✓ Second branches i.e. U and U′ / Tweede takke dws U en U′ ✓ outcomes / uitkomste (3)
9.3.2	$0,7x + 0,06x = 0,62$ $0,76x = 0,62$ $x = 0,82$	✓ $0,7x + 0,06x$ ✓ $= 0,62$ ✓ answer / *antwoord* (3)
		[18]
		TOTAL / *TOTAAL*: 150

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