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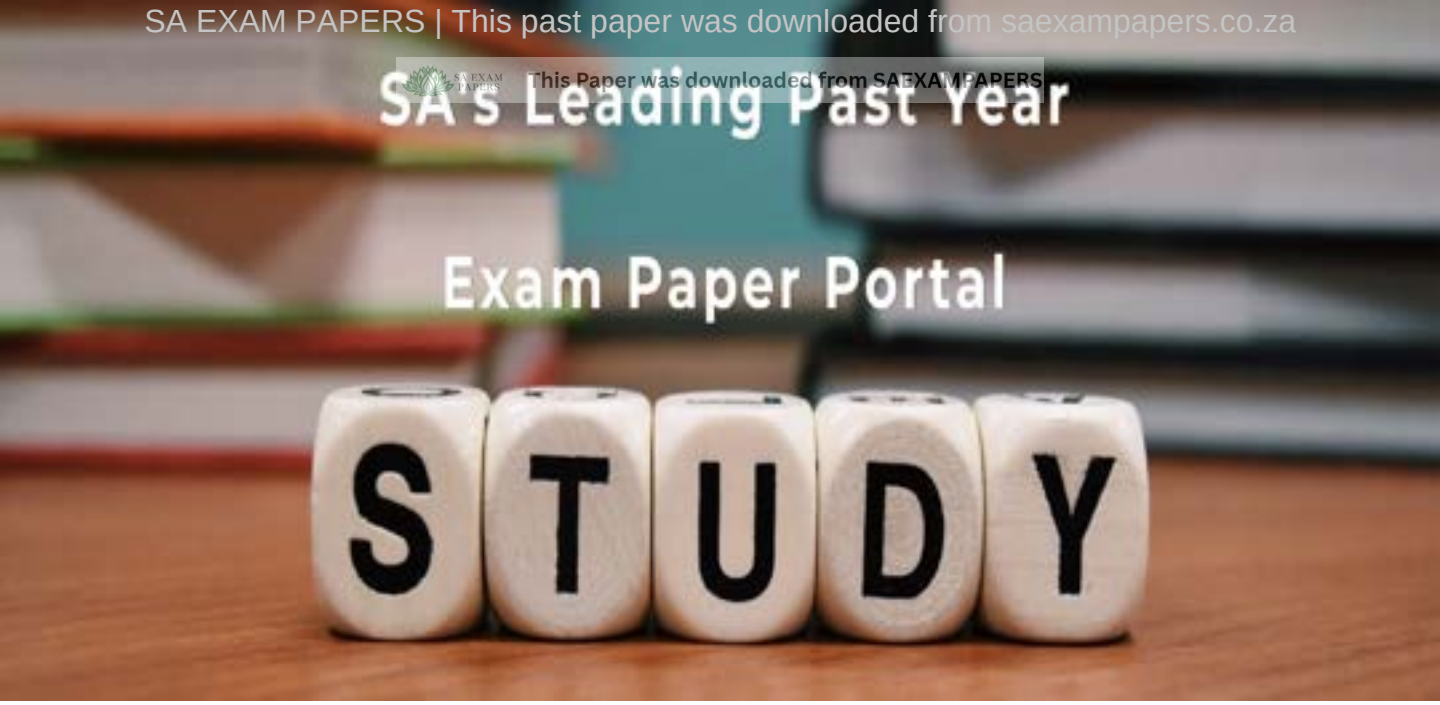

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE *NASIONALE SENIOR SERTIFIKAAT*

GRADE 12/*GRAAD* 12

TECHNICAL MATHEMATICS P1/*TEGNIESE WISKUNDE V1*

NOVEMBER 2025

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

MARKING CODES/*NASIENKODES*	
A	Accuracy/*Akkuraatheid*
AO	Answer only/*Slegs antwoord*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
F	Formula/*Formule*
M	Method/*Metode*
R	Rounding/*Afronding*
NPR	No penalty for rounding/*Geen penalisering vir afronding nie*
NPU	No penalty for units omitted/*Geen penalisering vir eenhede weggelaat nie*
S	Simplification/*Vereenvoudiging*
SF	Substitution in correct formula/*Vervanging in korrekte formule*

These marking guidelines consist of 18 pages.
Hierdie nasienriglyne bestaan uit 18 bladsye.

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NOTE:
- If a candidate answers a question TWICE, mark only the FIRST attempt.
- Consistent accuracy (CA) applies in all aspects of the marking guidelines where indicated.

LET WEL:
- *Indien 'n kandidaat 'n vraag TWEE keer beantwoord, sien slegs die EERSTE poging na.*
- *Volgehoue akkuraatheid (CA) is deurgaans op alle aspekte van die nasienriglyne van toepassing waar aangedui.*

QUESTION/*VRAAG* 1

1.1.1	$2x\left(x-\frac{4}{9}\right)=0$ $x=0$ or / *of* $\frac{4}{9}$	✓ 0 ✓ $\frac{4}{9}$	**A** **A** (2)
1.1.2	$6+(2x-5)(x+2)=0$ $6+2x^2-x-10=0$ $2x^2-x-4=0$ $x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$ $=\frac{-(-1)\pm\sqrt{(-1)^2-4(2)(-4)}}{2(2)}$ $\therefore x\approx 1,69$ or / *of* $x\approx -1,19$	✓ product/*produk* ✓ std form/*vorm* ✓ **SF** ✓ both each x – values/ *beide x-waardes*	**A** **CA** **CA** **CA** (4)
1.1.3	$(3-x)(x+2)>0$ Critical values/*Kritieke waardes*: 3 and/*en* -2 $\therefore -2<x<3$ **OR/*OF*** $x\in(-2;3)$ **OR/*OF*** $x>-2$ and/*en* $x<3$ **OR/*OF*** 	✓ both critical values/ *kritieke waardes* ✓ correct notation/ *korrekte notasie* **A** **A** **AO: Full marks/*Volpunte***	**A** **A** (2)

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1.2.1	$y = x - 1$	✓ subject/*onderwerp*	**A** (1)
1.2.2	$y - x + 1 = 0$ and $x^2 + xy = 3$		
	$x^2 + x(x-1) = 3$	✓ subst./*vervang*	**CA**
	$x^2 + x^2 - x - 3 = 0$		
	$2x^2 - x - 3 = 0$	✓ std form/*vorm*	**CA**
	$(2x-3)(x+1) = 0$	✓ Factors/*Faktore*/**SF**	**CA**
	OR/*OF*		
	$x = \frac{-(-1) \pm \sqrt{(-1)^2 - 4(2)(-3)}}{2(2)}$		
	$\therefore\ x = \frac{3}{2}$ or/*of* $x = -1$	✓ both *x*-values/ *beide x-waardes*	**CA**
	$\therefore\ y = \frac{3}{2} - 1 = \frac{1}{2}$ **OR/*OF*** $y = -1 - 1 = -2$	✓ both *y*-values/ *beide y-waardes*	**CA**
	OR/*OF*	**OR/*OF***	
	$x = y + 1$	✓ subst./*vervang*	**A**
	$(y+1)^2 + y(y+1) = 3$		
	$2y^2 + 3y - 2 = 0$	✓ std form/*vorm*	**CA**
	$(2y-1)(y+2) = 0$	✓ factors/ *faktore*/**SF**	**CA**
	OR/*OF*		
	$y = \frac{-(3) \pm \sqrt{(3)^2 - 4(2)(-2)}}{2(2)}$		
	$\therefore\ y = \frac{1}{2}$ or/*of* $y = -2$	✓ both *y*-values/ *beide y-waardes*	**CA**
	$\therefore\ x = \frac{1}{2} + 1 = \frac{3}{2}$ or/*of* $x = -2 + 1 = -1$	✓ both *x*-values/ *beide x-waardes*	**CA** (5)

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1.3.1	$BP = 2\pi NT$ $N = \frac{BP}{2\pi T}$	✓ dividing/*deling*	**A** (1)
1.3.2	$N = \frac{BP}{2\pi T}$ $= \frac{117\ 366{,}54}{2\pi(560{,}44)}$ $\approx 33{,}33\ r/s$ **OR/*OF*** $BP = 2\pi NT$ $117\ 366{,}54 = 2\pi N(560{,}44)$ $N \approx 33{,}33\ r/s$	✓ **SF** ✓ **S** **OR/*OF*** ✓ **SF** ✓ **S**	**CA** **CA** **A** **CA** (2)
1.4	$81 = 1010001_2$	✓ 1010001_2	**A** (1)
1.5	$81 \div 11011_2$ $= 81 \div 27$ $= 3$	✓ 27 ✓ 3 **AO: Full marks/ *Volpunte***	**CA** **CA** (2)
			[20]

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QUESTION/*VRAAG* 2

2.1.1	$\Delta = b^2 - 4ac$	✓ discriminant formula/ *diskriminant formule*	**A** (1)
2.1.2	$\Delta = b^2 - 4ac$ $= (-2)^2 - 4(1)(2)$ $= -4$	✓ **SF** ✓ discriminant/*diskriminant*	**A** **CA** (2)
2.1.3	Roots are non-real **OR** imaginery/*Wortels is nie-reële* ***OF*** *imaginêr*	✓ non-real/*nie-reële*	**A** (1)
2.2	$x^2 + 2x - 4 = m$ $x^2 + 2x - 4 - m = 0$ $\Delta = b^2 - 4ac$ $(2)^2 - 4(1)(-4 - m) = 0$ $20 + 4m = 0$ $m = -5$	✓ standard form/ standaardvorm ✓ **SF** ✓ $\Delta = 0$ ✓ value of/*waarde van m*	**CA** **CA** **A** **CA** (4)
			[8]

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QUESTION/*VRAAG* 3

3.1.1	$\sqrt[3]{27\,p^{12}}$ $=3\,p^4$	✓ 3 ✓ p^4	**A** **A** (2)
3.1.2	$\dfrac{3\times 2^x}{2^{x+2}-2^x}$ $=\dfrac{3\times 2^x}{2^x\cdot 2^2-2^x}$ **OR/ *OF*** $=\dfrac{3\times 2^x}{4\,.\,2^x-2^x}$ $=\dfrac{3\times 2^x}{2^x\,(4-1)}$ $=\dfrac{3\,.\,2^x}{3\,.\,2^x}$ $=1$	✓ product/ *produk* ✓ common factor/*gemene faktor*/subtract like terms/ *verskil tussen gelyksoortige terme* ✓ **S**	**A** **CA** **CA** (3)
3.2.1	$a^{\frac{1}{2}}$	✓ **S**	**A** (1)
3.2.2	$2\,\log_a a^{\frac{1}{2}}$ $=2\times\dfrac{1}{2}\log_a a$ $=1$	✓ log law/prop./ *log-wet/eienskap* ✓ 1	**A** **CA** (2)
3.3.1	$\log 27$ $=\log 3^3$ $=3\,\log 3$ $=3q$	✓ exp.prop./*eksp.eienskap* ✓ **S**	**A** **CA** (2)
3.3.2	$\log 60$ $=\log(2\times 3\times 10)$ $=\log 2+\log 3+\log 10$ $=p+q+1$	✓ log prop. ✓ $p+q$ ✓ 1	**A** **CA** **CA** (3)

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3.4	$\log_3 x + \log_3(x+2) = 1$ $\log_3 x(x+2) = 1$ $\log_3(x^2+2x) = \log_3 3$ **OR/*OF*** $x^2+2x = 3^1$ $x^2+2x-3=0$ $(x+3)(x-1)=0$ $x=-3$ or / *of* $x=1$ $\therefore x=1$	✓ log prop./ *log-wet* ✓ log property/ *log. eienskap* ✓ standard form/ *standaardvorm* ✓ $x \neq -3$ ✓ $x=1$	**A** **CA** **CA** **CA** **CA** (5)
3.5.1	$V = r \text{ cis } \theta$ $V = 2 \text{ cis } 120°$	✓ sub./ *vervang*	**A** (1)
3.5.2	$V = 2(\cos 120° + i \sin 120°)$ $V = -1+\sqrt{3}i$	✓ real ✓ imaginary	**CA** **CA** (2)
3.6	$a+7bi = -21i^2+21i$ $a+7bi = -21(-1)+21i$ $a+7bi = 21+21i$ $\therefore a=21$ and/*en* $\therefore b=3$	✓ $i^2=-1$ ✓ $a=21$ ✓ $b=3$	**A** **CA** **A** (3)
			[24]

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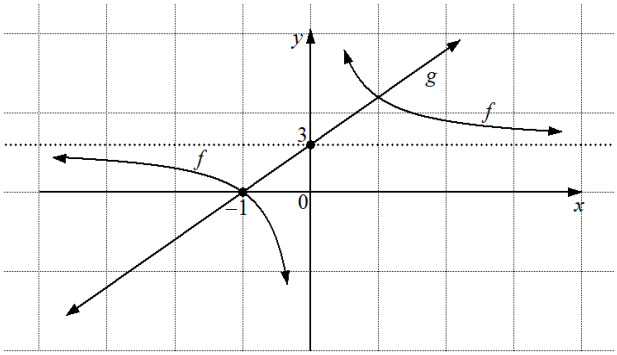
QUESTION 4/*VRAAG 4*

4.1.1	$x = 0$ $y = 3$	✓ $x = 0$ **A** ✓ $y = 3$ **A** (2)
4.1.2	$x \in \text{R}\,; x \neq 0$ **OR/*OF*** $x \in (-\infty\,;\,0) \cup (0\,;\,\infty)$	✓ $x \in \text{R}\,;\, x \neq 0$ **A** (1)
4.1.3	y -int:/ y *-afsnit:* $y = 3$ x -int:/ x *-afsnit:* $0 = 3x + 3$ $\therefore x = -1$	✓ y -intercept/ y *afsnit* **A** ✓ x -intercept/ x *-afsnit* **A** (2)
4.1.4	$f(x) = \frac{3}{x} + 3$ $0 = \frac{3}{x} + 3$ $\therefore x = -1$	✓ $f(x) = 0$ **A** ✓ $x = -1$ **CA** (2)
4.1.5		**For/Vir f :** ✓ shape of f / *vorm van* f **A** ✓ both asymptotes/ beide *assimptote* **CA** ✓ intercept of f / *afsnit van* f **CA** **For/Vir g :** ✓ shape of g / vorm van g **A** ✓ both intercepts of g / beide afsnitte van g **CA** (5)

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4.1.6	$-1 \le x < 0$ **OR/*OF*** $x \ge -1$ and / *en* $x < 0$ **OR/*OF*** $x \in [-1;0)$	✓ critical values/ *kritieke waardes* **CA** ✓ notation/*notasie* **A** (2)
4.2.1	$x = -1$	✓ $x = -1$ **A** (1)
4.2.2	$\text{B}(2;\ 0)$	✓ 2 **CA** ✓ 0 **A** (2)
4.2.3	$f(x) = -(x+1)^2 + q$ Subst: $\text{A}(-4;0)$: **OR/ *OF*** Subst: $\text{B}(2;0)$: $\therefore \quad 0 = -(-4+1)^2 + q$ $\therefore \quad 0 = -(2+1)^2 + q$ $\therefore \quad 0 = -9 + q$ $\therefore \quad q = 9$ **OR/*OF*** $f(x) = -(x+4)(x-2)$ $= -x^2 - 2x + 8$ $f(-1) = -(-1)^2 - 2(-1) + 8$ **OR/*OF*** $q = \frac{4(-1)(8) - (-2)^2}{4(-1)}$ $\therefore q = 9$	✓ subst. the value of p / *vervanging van* p **A** ✓ substitute A or B/ *vervang* A *of* B **CA** ✓ value of/ *waarde van q* **CA** **OR/ *OF*** ✓ subst. the x-intercepts **A** ✓ subst. the value of p / *vervanging van* p **CA** ✓ value of/ *waarde van* q **CA** (3)

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4.2.4	$y \leq 9$ **OR/** ***OF*** $y \in (-\infty\,;\,9]$ **OR/*OF*** $-\infty < y \leq 9$	✓ correct interval **CA** (1)
4.2.5	$y = 6$	✓ $y = 6$ **A** (1)
4.2.6	$g(x) = a^x + 6$ Subst / *Vervang* $C(-1;9)$: $9 = a^{-1} + 6$ $3 = \frac{1}{a}$ $a = \frac{1}{3}$ $g(x) = \left(\frac{1}{3}\right)^x + 6$ **OR / *OF*** $g(x) = 3^{-x} + 6$	✓ substitute C / *vervang* C **CA** ✓ value of / *waarde van a* **CA** (2)
		[24]

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QUESTION/*VRAAG* 5

5.1.1	$A = P(1-in)$	✓ **F**	**A** (1)
5.1.2	$A = P(1-in)$ $= 4\,990\left[1-(0,0589\times 7)\right]$ $= \approx \text{R}2\,932,62$	✓ **SF** ✓ **S**	**A** **CA** (2)
5.2	$A = P(1+i)^n$ $= \text{R}\ 32\,000(1+0,0715)^4$ $\approx \text{R}\,42\,181,18$	✓ **F** ✓ **SF** ✓ **S**	**A** **A** **CA** (3)
5.3.1	$5\,000\times\frac{1}{2}=2\,500$ litres/*liter*	✓ litres/*liter*	**A** (1)
5.3.2	$A = P(1-i)^n$ $2\,500 = 5\,000(1-i)^{35}$ $\frac{2\,500}{5\,000}=(1-i)^{35}$ $\sqrt[35]{\frac{2\,500}{5\,000}}=1-i$ $i=1-\sqrt[35]{\frac{2\,500}{5\,000}}$ $i = 0,0196...$ **OR/** ***OF*** $r \approx 1,96...\%$	✓**F** ✓**SF** ✓ make i the subject/ *maak i die onderwerp* ✓ decimal value of i OR r/ *desimale waarde van* i *OF* r **NPR**	**A** **A** **CA** **CA** (4)
5.3.3	$A = P(1-i)^n$ $= 5\,000(1-0,0196...)^{60}$ $\approx$ 1 524,64 litres/*liter* ∴ Yes, more than 1 500 litres will be left in the tank/ Ja, *meer as 1 500 liter sal in die tenk oor wees.*	✓ $n = 60$ ✓ **SF** ✓ **S** ✓ conclusion/*gevolgtrekking*	**A** **CA** **CA** **CA** (4)
			[15]

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QUESTION/*VRAAG* 6

6.1	$f(x)=4+\frac{1}{3}x$ $f'(x)=\lim_{h\to 0}\frac{f(x+h)-f(x)}{h}$ $=\lim_{h\to 0}\frac{4+\frac{1}{3}(x+h)-\left(4+\frac{1}{3}x\right)}{h}$ $=\lim_{h\to 0}\frac{4+\frac{1}{3}x+\frac{1}{3}h-4-\frac{1}{3}x}{h}$ $=\lim_{h\to 0}\frac{\frac{1}{3}h}{h}$ $=\lim_{h\to 0}\left(\frac{1}{3}\right)$ $\therefore f'(x)=\frac{1}{3}$	✓ definition/*definisie* ✓ **SF** ✓ **S** ✓ **S** ✓ $\frac{1}{3}$	**A** **A** **CA** **CA** **CA** (5)
6.2.1	$y=-3x^{6-4}$ $y=-3x^2$	✓ **S**	**A** (1)
6.2.2	$\frac{dy}{dx}=-6x$	✓ $-6x$	**CA** (1)
6.3.1	$D_x\left[5x^8-11\right]$ $=40x^7$	✓ $40x^7$ ✓ 0 (Implied/*Aanvaar*)	**A** **A** (2)
6.3.2	$\frac{d}{dx}\left(-\frac{10}{x}\right)$ $=\frac{d}{dx}\left(-10x^{-1}\right)$ $=10x^{-2}$	✓ $10x^{-1}$ ✓ $10x^{-2}$	**A** **CA** (2)

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6.3.3	$f(x)=-\frac{4x}{3}+\sqrt[4]{x^{-5}}$ $=-\frac{4x}{3}+x^{-\frac{5}{4}}$ $f'(x)=-\frac{4}{3}-\frac{5}{4}x^{-\frac{9}{4}}$	✓ $x^{-\frac{5}{4}}$ ✓ $-\frac{4}{3}$ ✓ $-\frac{5}{4}x^{-\frac{9}{4}}$	**A** **A** **CA** (3)
6.4.1	$y=100+15x$ $\therefore m=15$	✓ $m=15$	**A** (1)
6.4.2	$y=100+15x$ $25=100+15x$ $\therefore x=-5$ $h'(x)=3ax^2+12x=15$ $h'(-5)=3a(-5)^2+12(-5)=15$ $75\ a=75$ $\therefore a=1$	✓ subst./*vervang* $y=25$ ✓ $x=-5$ ✓ derivative/*afgeleide* ✓ $h'(-5)=15$ ✓ value of a /*waarde van* a	**A** **CA** **A** **CA** **CA** (5)
			[20]

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QUESTION/*VRAAG* 7

7.1	$y = 20$	✓ $y = 20$	**A** (1)
7.2	$g(5) = 0$ $a(5)^3 - 2(5)^2 - 19(5) + 20 = 0$ $125a = 125$ $a = 1$	✓ equating to 0/*vervanging en gelykstel aan 0* ✓ Substitution/*vervanging*	**A** **A** (2)
7.3	$x^3 - 2x^2 - 19x + 20 = 0$ $(x-5)(x^2 + 3x - 4) = 0$ $(x-5)(x-1)(x+4) = 0$ $\therefore x = 5$ or/*of* $x = 1$ or/*of* $x = -4$ **OR/*OF*** $(x+4)(x^2 - 6x + 5) = 0$ $(x+4)(x-1)(x-5) = 0$ $\therefore x = -4$ or/*of* $x = 1$ or/*of* $x = 5$ **OR/*OF*** $(x-1)(x^2 - x - 20) = 0$ $(x-1)(x-5)(x+4) = 0$ $\therefore x = 1$ or/*of* $x = 5$ or/*of* $x = -4$	✓ **M** ✓✓✓ x-intercepts/*afsnitte* **OR/*OF*** ✓ **M** ✓✓✓ x-intercepts/*afsnitte* **OR/*OF*** ✓ **M** ✓✓✓ x-intercepts/*afsnitte* **AO Full marks/*Volpunte***	**A** **CA** **A** **CA** **A** **CA** (4)
7.4	$g'(x) = 3x^2 - 4x - 19 = 0$ $x = \dfrac{-(-4) \pm \sqrt{(-4)^2 - 4(3)(-19)}}{2(3)}$ $x = 3,27$ or/*of* $x = -1,94$ $g(3,27) = (3,27)^3 - 2(3,27)^2 - 19(3,27) + 20$ $\approx -28,55$ $g(-1,94) = (-1,94)^3 - 2(-1,94)^2 - 19(-1,94) + 20$ $\approx 42,03$ $\therefore (3,27\ ;\ -28,55)$ or/*of* $(-1,94\ ;\ 42,03)$	✓ derivative/*afgeleide* ✓ equating derivative to 0/*stel afgeleide gelyk aan 0* ✓ factors/formula/*faktore/formule* ✓ both values of/*beide waardes van x* ✓ both values of/*beide waardes van y*	**A** **A** **CA** **CA** **CA** (5)

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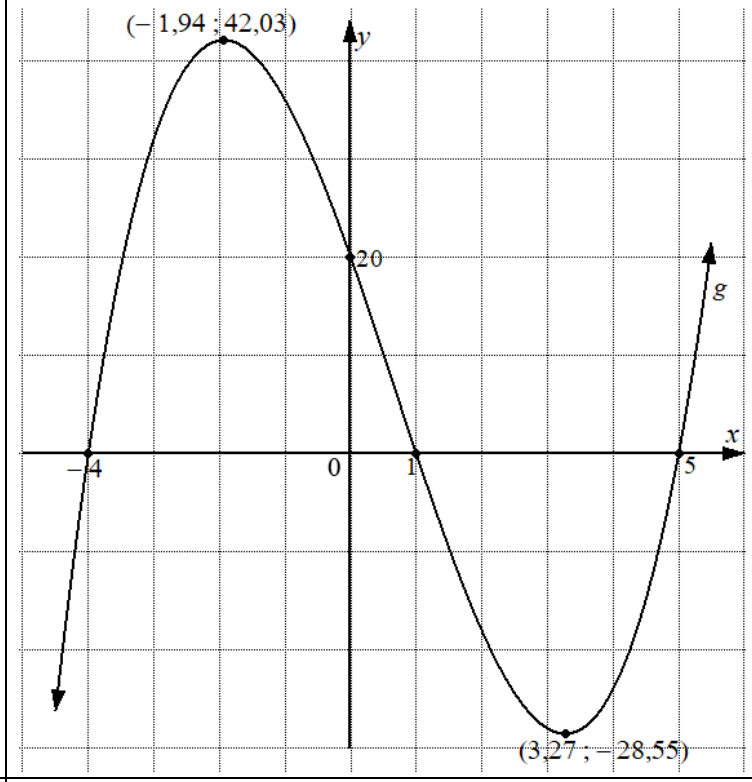
7.5		✓ *y*-intercept/*afsnit* **CA** ✓ all *x*-intercepts/ *alle x-afsnitte* **CA** ✓ both turning points/*beide draaipunte* **CA** ✓ shape/*vorm* **CA** (4)
		[16]

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QUESTION/*VRAAG* 8

8.1	100	✓ 100	**A** (1)
8.2	$F(5)=20(5)-(5)^2$ $=75$	✓ substitution/*vervanging* ✓ $F=75$	**A** **CA** (2)
8.3	Amount made after $5<t\le p$ / *Bedrag na* $5<t\le p$: $=25\times$R2,50 =R62,50	✓ 25 ✓ **S**	**CA** **CA** (2)
8.4	$F(t)=20t-t^2$ $F'(t)=20-2t$ For/*Vir* minimum: $F'(t)=0$ $20-2t=0$ $t=\frac{20}{2}$ $t=10$ min $\therefore p=10$ min **OR/*OF*** $t=\frac{-b}{2a}$ $=\frac{-(20)}{2(-1)}$ $=10$ min $\therefore p=10$ min **OR/*OF*** $20t-t^2=100$ $t^2-20t+100=0$ $(t-10)^2=0$ **OR/*OF*** $t=\frac{-(-20)\pm\sqrt{(-20)^2-4(1)(100)}}{2(1)}$ $t=10$ $\therefore p=10$ min	✓ derivative/*afgeleide* ✓ equating derivative to 0/ *stel afgeleide gelyk aan 0* ✓ value of/*waarde van t* **OR/*OF*** ✓ **F** ✓ **SF** ✓ answer/ *antwoord* **OR/*OF*** ✓ equating to 100/ *stel gelyk aan 100* ✓ factors/ *faktore*/SF ✓ answer/ *antwoord*	**A** **A** **CA** **A** **A** **CA** **A** **CA** **CA** (3)

[8]

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QUESTION/*VRAAG* 9

9.1.1	$\int x^3 dx$ $= \frac{x^4}{4} + C$	✓ $\frac{x^4}{4}$ **A** ✓ C **A** (2)
9.1.2	$\int\left[2^{3x} + \frac{1}{x^2}(x-2)\right]dx$ **OR/*OF*** $\int\left[2^{3x} + x^{-2}(x-2)\right]dx$ $= \int\left[2^{3x} + \frac{1}{x} - \frac{2}{x^2}\right]dx$ $= \int 2^{3x} + \frac{1}{x} - 2x^{-2}\,dx$ **OR/*OF*** $\int 2^{3x} + x^{-1} - 2x^{-2}\,dx$ $= \frac{2^{3x}}{3\ln 2} + \ln x - \left(\frac{2x^{-1}}{-1}\right) + C$ $= \frac{2^{3x}}{3\ln 2} + \ln x + 2x^{-1} + C$	✓ **S** **A** ✓ $-2x^{-2}$ **CA** ✓ $\frac{2^{3x}}{3\ln 2}$ **A** ✓ $+\ln x$ **CA** ✓ $+2x^{-1} + C$ **CA** (5)

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9.2	$f(x) = -2x^2 + 8x = 0$		
	A: Shaded area from/***Skakeerde area*** *van* $x = 0$ to $x = 1$		
	$A_A = \int_0^1 (-2x^2 + 8x)\,dx$	✓ area notation/ *area notasie*	**A**
	$= \left[-\frac{2}{3}x^3 + 4x^2 \right]_0^1$	✓ $\frac{2}{3}x^3 + 4x^2$	**A**
	$= \left[-\frac{2}{3}(1)^3 + 4(1)^2 \right] - \left[-\frac{2}{3}(0)^3 + 4(0)^2 \right]$	✓ **SF**	**CA**
	$= \frac{10}{3}$ *units*^{2} / *eenhede*^{2}	✓ $\frac{10}{3}$ *units*^{2} / *eenhede*^{2}	**CA**
	B: Unshaded area from/ ***Onskakeerde area*** *van* $x = 1$ to $x = 4$		
	$A_B = \int_1^4 (-2x^2 + 8x)\,dx$		
	$= \left[-\frac{2}{3}x^3 + 4x^2 \right]_1^4$	✓ **SF**	**CA**
	$= \left[-\frac{2}{3}(4)^3 + 4(4)^2 \right] - \left[-\frac{2}{3}(1)^3 + 4(1)^2 \right]$		
	$= \frac{64}{3} - \frac{10}{3}$		
	$= 18$ *units*^{2} / *eenhede*^{2}	✓ 18 *units*^{2} / *eenhede*^{2}	**CA**
	OR/*OF*	**OR/*OF***	
	A + B: Shaded area/ ***Skakeerde area*** *van* **+ Unshaded area** ***Onskakeerde area*** *van* $x = 0$ to $x = 4$		
	$A_{A+B} = \int_0^4 (-2x^2 + 8x)\,dx$		
	$= \left[-\frac{2}{3}x^3 + 4x^2 \right]_0^4$		
	$= \left[-\frac{2}{3}(4)^3 + 4(4)^2 - 0 \right]$	✓ **SF**	**CA**
	$= \frac{64}{3}$		
	$\therefore A_B = \frac{64}{3} - \frac{10}{3} = 18$ units^2 / *eenhede*^{2}	✓ 18 *units*^{2} / *eenhede*^{2}	**CA**
	Ratio/*Verhouding*:		
	$\frac{A}{B} = \frac{\left(\frac{10}{3}\right)}{18} = 0{,}1851$	✓ ratio/*verhouding*	**CA**
	The ratio is less than $0{,}2$ /*Die verhouding is minder as* $0{,}2$.	✓ conclusion/ *gevolgtrekking*	**CA** (8)
			[15]

TOTAL/*TOTAAL*: 150

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