I.

Memorandum
gr 9 Vraestel 1 Junie

1.1.1	rasionaal ($\mathbb{Q}$) ✓	(1)	✓ antw
1.1.2	Irrasionaal ($\mathbb{Q}'$) ✓	(1)	✓ antw
1.1.3	rasionaal ($\mathbb{Q}$) ✓	(1)	✓ antw
1.1.4	nie-reëel ✓	(1)	✓ antw
1.2	$\sqrt[3]{1331}$ of 11 ✓	(1)	✓ antw
1.3	$108 = 2^2 \times 3^3$ $396 = 2^2 \times 3^2 \times 11$ } ✓		✓ priemfaktor
	$KGV = 2^2 \times 3^3 \times 11 = 1188$ ✓	(2)	✓ kgv.
		[7]	
2.1	$A = P(1+i)^n$ ✓		✓ formule
	$= 15\,000(1+\frac{12}{100})^5$ ✓		✓ subst
	$= R26435,13$ ✓		✓ A
	rente $= R11435,13$ ✓	(4)	✓ rente
2.2	$\frac{80}{100}$ ✓ $\times 299,99 = R239,99$ ✓		✓ $\frac{80}{100}$ ✓ R239,99
	✓ of 20% = R60,00 (59,998)		(20% ✓
	∴ Merkprys 239,99 R240 / aanvaar.	(2)	mp ✓)
2.3.1	$\frac{14}{114} \times \frac{9500}{1} = R1166,67$ ✓✓	(2)	R1166,67 ✓✓ of C
2.3.2	30% = R2850 of 70% = 6650 } ✓		✓ 30% & 70%
	$A = 6650(1+0,15\times3)$		✓ subst
	$= R9642,50$ ✓ paaiement R267,85	(4)	✓ antw ✓ paaiement

9500 ↓ 1377,5 ↓ 382,64

2850 ↓ 1132,50 ✓

2.4	10 : 8 → 18	
	$\frac{10}{18} \times \frac{720}{1} = 400$ ✓ – R5 } ammal [2/3]	400 ✓
	$\frac{8}{18} \times \frac{720}{1} = 320$ ✓ – R2.	320 ✓
	Bedrag 400×5 + 320×2 = R2640 ✓ (3) apart reg ✓	2640 ✓
2.5	1 min → 25 ℓ	
	10 min → 10×25 = 250 ℓ. ✓✓ (2)	250 ✓✓
2.6	90 km/h → $3\frac{1}{3}$ uur (200 min)	
	75 km/h → $3\frac{1}{3} \times \frac{90}{75}$ (240 min)	
	= 4 uur of 240 min (2)	4 uur ✓✓
2.7	£16,1 ✓ = R289,32	16,1 ✓
	£1 = $\frac{289,32}{16,1}$ = R17,97 ✓ (2)	17,97 ✓
	£12,80 → R22,60 ✓	
	[21]	

3.1.1 26 ; 29 ✓ (1) 26 en 29 ✓

3.1.2 81 : 243 ✓ (1) 81 en 243 ✓

3.1.3 $\frac{1}{64}$; $\frac{1}{128}$ ✓ (1) $\frac{1}{64}$ en $\frac{1}{128}$ ✓

3.2.1 Tel minus sewe by (of trek sewe af) (1) in woorde

3.2.2 $T_n = -7n + 2$ ✓✓ (2) $-7n$ ✓ $+2$ ✓

3.2.3 $T_{23} = -7(23) + 2 = -159$ Slegs antw ✓ (2) sub -159

3.2.4 $-7n + 2 = -642$ ✓

$-7n = -644$

$n = 92$ ✓ (2) $n = 92$ ✓ slegs antw ✓✓

3.3.1 $y = 2x - 1$ ✓ $2n - 1$ ✓ ✓ (2) $2x$ ✓ -1 ✓

3.3.2 $a = 10$ ✓ $b = 43$ ✓ (2) a ✓ b ✓

[14]

4.1 $4x^3$ ✓ (1) antw ✓

4.2 $9a^4$ ✓ (1) antw ✓

4.3 $-\frac{p^4}{2q^3}$ ✓ ✓ ✓ (3) $-\frac{1}{2}$ ✓ p^4 ✓ $/q^3$ ✓

4.4 $\frac{-6y^5z^2}{x^4}$ ✓ ✓ ✓ ✓ (4) -6 ✓ y^5 ✓ z^2 ✓ $/x^4$ ✓

4.5 $-8x^6 - 9x^6 = -17x^6$ ✓ ✓ ✓ (3) $-8x^6$ ✓ $-9x^6$ ✓ $-17x^6$ ✓

4.6 1 ✓ $- 3^3$ ✓ $= -26$ ✓ (3) 1 ✓ -27 ✓ -26 ✓

4.7 $-\frac{1m^5}{9n^3}$ ✓ ✓ ✓ (3) $-\frac{1}{9}$ ✓ $\frac{m^5}{n^3}$ ✓

4.8 $-2m$ ✓ $+1$ ✓ (2) $-2m$ ✓ $+1$ ✓

[20]

5.1 $-2x(x^2-3)$

$= -2x^3 + 6x$ ✓ (1)

$-2x^3 + 6x$ ✓

5.1.2 $a^2 - b^2$ ✓ $0ab$ ✓ (3)

a^2 ✓ $0ab$ b^2 ✓

5.1.3 $-4(9m^2 + 12mn + 4n^2)$

$= -36m^2 - 48mn - 16n^2$ ✓ (4)

$9m^2 + 12mn + 4n^2$ ✓

ans ✓

5.2.1 $2(3x+2) + 2(2x-1)$

$= 6x + 4 + 4x - 2 = 10x + 2$ (2)

$10x + 2$

5.2.2 $(3x+2)(2x-1)$

$= 6x^2 + 2x - 2$ (3)

$6x^2 + x - 2$

gen like terms (-1)

5.3 $\sqrt[3]{-5(-\frac{1}{2})^3 + 2(4) + 7}$

$= \frac{5}{2}$ $(2,5)$ (2)

subst ✓

2,5 ✓

[15]

6.1.1 $x = 50$ (1) | 50 ✓

6.1.2 $x = 3$ (1) | 3 ✓

6.2.1 $3(x-6) = 6(x-3)$ | slegs onbekende: slegs 1 punt. | hakies ✓

$3x - 18 = 6x - 18$ ✓

$-3x = 0$

$x = 0$ ✓ nie $\frac{0}{-3}$ gee punt. (2) | antw ✓

6.2.2 $x^2 - x(x-2) = 4$

$x^2 - x^2 + 2x = 4$ ✓ | hakies ✓

$2x = 4$ $x = 2$ ✓ (2) | antw ✓

6.2.3 $(x-3)(x-2) - 5(1-x) = 10$ | (✓)(✓) ( )

$x^2 - 5x + 6 - 5 + 5x = 10$ | hakies

$x^2 = 9$ ✓ | $x^2 = 9$ ✓

$x = \pm 3$ ✓ (4) | $x = \pm 3$ ✓

6.2.4 $3^x = 81 = 3^4$. $x = 4$ ✓ (1) | $x = 4$ ✓

6.2.5 $25^{n-1} = \frac{1}{125}$

$5^{2n-2} = 5^{-3}$ ✓ | piemfaktore LK ✓ RK ✓

$2n - 2 = -3$ ✓

$2n = -1$ | eksp = eksp

$n = -\frac{1}{2}$ ✓ slegs antw (4/4) (4) | n ✓

6.2.6 $x \in R,\ x \neq 1$ (1) | antw ✓

6.3 $7x - 8 = 20$ ✓ $4 \times 7 - 8 = 20$ ✓ | vgl ✓

$7x = 28$ $\therefore x = 4$ ✓

$x = 4$ ✓ (2) | antw ✓

slegs antw ✓ ✓

6.4	Pa	$2x$ ✓	$3(x-12)$ $2x-12$ ✓	$2x$ ✓ $2x-12$ ✓
	Seun	$2x$	$2x-12$ ✓	$x-12$ ✓

$3(2x-12) = 2x-12$ ✓ Vgl ✓

$3x-36 = 2x-12$

$2x = 24$ ✓ $x = 24$ ✓

(5) 8 legs antw $\frac{1}{5}$-

Vgl te maklik gee punte af.

[23]