



eduresourcza.com



PROVINCIAL EXAMINATION
PROVINSIALE EKSAMEN
NOVEMBER 2023
GRADE/*GRAAD* 9
**MARKING GUIDELINES/
*NASIENRIGLYNE***

MATHEMATICS/*WISKUNDE*
PAPER/*VRAESTEL* 1

9 pages/*bladsye*

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**
SECTION/AFDELING A
QUESTION/VRAAG 1

1.1	1.2	1.3	1.4	1.5
A ✓	C ✓	D ✓	C ✓	B ✓

[5]
SECTION/AFDELING B
QUESTION/VRAAG 2

2.1	2.1.1	8 ✓A	1 mark for the HCF <i>1 punt vir GGF</i>	(1)
	2.1.2	$16m^2n$ ✓A	1 mark for the LCM <i>1 punt vir KGV</i>	(1)
2.2	2.2.1	$20\% \times 3\,000$ ✓M $= 600$ $= 3\,000 - 600$ $= R2\,400$ ✓CA OR/OF $R2\,400$ ✓✓A OR/OF $80\% \times 3\,000$ ✓M $= R2\,400$ ✓CA	1 mark for multiplying with 20% <i>1 punt vir vermenigvuldig met 20%</i> 1 mark for the answer <i>1 punt vir antwoord</i> Answer ONLY, full marks <i>SLEGS antwoord, volpunte</i>	(2)
	2.2.2	$\frac{3}{4} \times 3\,000$ ✓M $= R2\,250$ ✓CA OR/OF $75\% \times 3\,000$ ✓M $= R2\,250$ ✓CA	1 mark for multiplying with $\frac{3}{4}$ <i>1 punt vir vermenigvuldig met $\frac{3}{4}$</i> 1 mark for the answer <i>1 punt vir antwoord</i> Answer ONLY full marks <i>SLEGS antwoord, volpunte</i>	(2)

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**

2.3	$1 : 4,47$ $= \frac{18356,26}{4,47} \checkmark \text{M}$ $= 4\,106,55 \checkmark \text{CA}$ OR/OF $4,47x = 18\,356,26 \checkmark \text{M}$ $x = \frac{18\,356,26}{4,47}$ $x = 4\,106,55 \checkmark \text{CA}$		1 mark for division <i>1 punt vir deling</i> 1 mark for the final answer <i>1 punt vir finale antwoord</i> OR/OF 2 marks if a table or number line is used to get answer <i>2 punte as tabel of getallyn gebruik is om antwoord te verkry</i> OR/OF Consider alternative mathematically correct responses which lead to the correct answer./Oorweeg alternatiewe wiskundig korrekte response wat tot die korrekte antwoord lei.	(2)
2.4	2.4.1	Deposit/ <i>Deposito</i> = 10% of R33 100 = R3 310 Balance/ <i>Balans</i> = R33 100 – R3 310 = R29 790 $\checkmark \text{M}$ $A = P(1 + in)$ = 29 790(1 + 0,11 $\times$ 3) $\checkmark \text{M}$ = R39 620,70 Kgabo will pay: / <i>Kgabo sal betaal:</i> $39\,620,70 + 3\,310 = \text{R}42\,930,70 \checkmark \text{CA}$	1 mark for R29 790 <i>1 punt vir R29 790</i> 1 mark for substitution <i>1 punt vir vervanging</i> 1 mark for answer A = <i>1 punt vir antwoord A =</i>	(3)
	2.4.2	$39\,620,70 - 29\,790 \checkmark \text{M} = \text{R}9\,830,70 \checkmark \text{CA}$	1 mark for $39\,620,70 - 29\,790$ <i>1 punt vir $39\,620,70 - 29\,790$</i> 1 mark for answer <i>1 punt vir antwoord</i> Answer ONLY, full marks SLEGS antwoord, volpunte	(2)
2.5	$A = P \left(1 + \frac{r}{100}\right)^n$ $A = 2\,500 \left(1 + \frac{7,5}{100}\right)^5 \checkmark \text{M}$ $A = 2\,500(1 + 0,075)^5$ $A = \text{R}3\,589,07 \checkmark \text{CA}$ OR/OF $i = \frac{7,5}{100} = 0,075$ $A = P(1 + i)^n$ $A = 2\,500(1 + 0,075)^5 \checkmark \text{M}$ $A = \text{R}3\,589,07 \checkmark \text{CA}$		1 mark for substitution in formula <i>1 punt vir vervanging in formule</i> 1 mark for answer <i>1 punt vir antwoord</i>	(2)
				[15]

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**
QUESTION/VRAAG 3

3.1	$-\frac{1}{24} \checkmark \mathbf{A}$		1 mark for answer <i>1 punt vir antwoord</i>	(1)
3.2	3.2.1	$\sqrt{36} + \sqrt[3]{-216} + (-1)(-2)$ $= 6 - 6 + 2 \checkmark \checkmark \mathbf{M}$ $= 2 \checkmark \mathbf{A}$	1 mark for -6 <i>1 punt vir -6</i> 1 mark for $6 - 6 + 2$ <i>1 punt vir $6 - 6 + 2$</i> 1 mark for the correct answer <i>1 punt vir die korrekte antwoord</i> Answer ONLY, no marks <i>SLEGS antwoord, geen punte nie</i>	(3)
	3.2.2	$-5 + (-8) - (4)(-3)$ $= -5 - 8 + 12 \checkmark \mathbf{M}$ $= -1 \checkmark \mathbf{A}$	1 mark for 12 <i>1 punt vir 12</i> 1 mark for the correct answer <i>1 punt vir die korrekte antwoord</i> Answer ONLY, no marks <i>SLEGS antwoord, geen punte nie</i>	(2)
3.3	$1\ 312 - 1\ 200 + 400 \checkmark \mathbf{M}$ $= 512 \checkmark \mathbf{A}$ OR/OF She has/Sy het R512 $\checkmark \checkmark \mathbf{A}$		1 mark for method <i>1 punt vir metode</i> 1 mark for answer <i>1 punt vir antwoord</i> Answer ONLY, full marks <i>SLEGS antwoord, volpunte</i>	(2)
				[8]

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**
QUESTION/VRAAG 4

4.1	Exponents/EkspONENTE ✓ A			1 mark for answer 1 punt vir antwoord	(1)									
4.2	<table border="1"><tr><td>4.2.1</td><td>$pq \times pq = pq^2$</td><td>$= p^2q^2$ ✓ A</td></tr><tr><td>4.2.2</td><td>$(xy + xy)$ $= (xy)^2$</td><td>$= 2xy$ ✓ A</td></tr><tr><td>4.2.3</td><td>$5^4 \times \frac{1}{5^{-3}} = 5^1$</td><td>$= 5^4 \times 5^3$ $= 5^7$ ✓ A</td></tr></table>			4.2.1	$pq \times pq = pq^2$	$= p^2q^2$ ✓ A	4.2.2	$(xy + xy)$ $= (xy)^2$	$= 2xy$ ✓ A	4.2.3	$5^4 \times \frac{1}{5^{-3}} = 5^1$	$= 5^4 \times 5^3$ $= 5^7$ ✓ A	1 mark for each correct answer 1 punt vir elke korrekte antwoord	(3)
4.2.1	$pq \times pq = pq^2$	$= p^2q^2$ ✓ A												
4.2.2	$(xy + xy)$ $= (xy)^2$	$= 2xy$ ✓ A												
4.2.3	$5^4 \times \frac{1}{5^{-3}} = 5^1$	$= 5^4 \times 5^3$ $= 5^7$ ✓ A												
4.3	$\frac{8r^3 \cdot 2(r^2)^4}{2^4 \cdot (r^2)^5}$ $\frac{16r^3 \cdot r^8}{16r^{10}} \checkmark M$ $= r^{11-10} \checkmark CA$ $= r \checkmark A$ OR/OF $\frac{8r^3 \cdot 2(r^2)^4}{2^4 \cdot (r^2)^5}$ $= \frac{2^3 r^3 \cdot 2r^8}{2^4 r^{10}} \checkmark M$ $= 2^{4-4} r^{11-10}$ $= 2^0 r^1 \checkmark CA$ $= r \checkmark A$			1 mark for removing the brackets 1 punt vir verwydering van die hakies 1 mark for applying laws of exponents 1 punt vir toepassing van eksponensiële wette 1 mark for answer 1 punt vir antwoord	(3)									
					[7]									

QUESTION/VRAAG 5

5.1	27; 38 ✓ A	1 mark for both terms 1 punt vir albei terme.	(1)
5.2	5.2.1	67 cm ✓ A	1 mark for the answer 1 punt vir die antwoord
	5.2.2	55; 61; 67; 73; 79; 85; 91; 97; 103; 109; 115; 121; 127; 133; 139; 145 ✓ A There are 16 chairs. Daar is 16 stoele. ✓ A OR/OF $d = 6$ $n = 1: T_1 = 6(1) + 49 = 55$ $n = 2: T_2 = 6(2) + 49 = 61$ $T_n = 6n + 49 \checkmark M$ $145 = 6n + 49 \checkmark M$ $6n = 96$ $n = 16 \checkmark A$	1 mark for the 1 st 8 correct terms 1 punt vir 1ste 8 korrekte terme 1 mark for the 2 nd 8 correct terms 1 punt vir 2de 8 korrekte terme 1 mark for answer 1 punt vir antwoord
			(3)

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**

5.3	5.3.1	$T_n =$ (common difference/ <i>algemene verskil</i>) (Input/ <i>Insette</i>) – 7 M ✓ CA OR/OF $T_n = 5n - 7$ ✓ M ✓ CA	2 marks for formula and answer <i>2 punte vir formule en antwoord</i>	(2)										
	5.3.2	$T_n = 5n - 7$ $13 = 5n - 7$ ✓ M $13 + 7 = 5n$ $20 = 5n$ $4 = n$ ✓ A OR/OF <table border="1"> <tr> <td>Input/<i>Insette</i></td><td>-2</td><td>-1</td><td>0</td><td>4 ✓ ✓ A</td></tr> <tr> <td>Output/<i>Uitset</i></td><td>-17</td><td>-12</td><td>-7</td><td>13</td></tr> </table>	Input/ <i>Insette</i>	-2	-1	0	4 ✓ ✓ A	Output/ <i>Uitset</i>	-17	-12	-7	13	1 mark for correct substitution <i>1 punt vir regte vervanging</i> 1 mark for answer <i>1 punt vir antwoord</i> OR/OF 2 marks for the right answer <i>2 punte vir die regte antwoord</i>	(2)
Input/ <i>Insette</i>	-2	-1	0	4 ✓ ✓ A										
Output/ <i>Uitset</i>	-17	-12	-7	13										
				[9]										

QUESTION/VRAAG 6

6.1	Commutative <i>Kommutatiewe</i> ✓ A	1 mark for answer <i>1 punt vir antwoord</i>	(1)
6.2	Five hundred and forty-seven million, two hundred and eighty-six thousand, three hundred and eighty/ <i>Vyfhonderd sewe en veertig miljoen, tweehonderd ses en tagtig duisend drie honderd en tagtig</i>	1 mark for answer <i>1 punt vir antwoord</i>	(1)
6.3.	$3 + 2a^3$ ✓ A OR/OF $12a^2 + 8a^5$ $= 4a^2(3 + 2a^3)$ ✓ A	1 mark for $3 + 2a^3$ <i>1 punt vir $3 + 2a^3$</i>	(1)
6.4	$2r^2 - 8rs - 9s^2 + 7$ $2(1)^2 - 8(1)(-2) - 9(-2)^2 + 7$ ✓ M $= 2(1) + 8(2) - 9(4) + 7$ $= 2 + 16 - 36 + 7$ ✓ CA $= -11$ ✓ A	1 mark for correct substitution <i>1 punt vir regte vervanging</i> 1 mark for removing the brackets <i>1 punt vir verwydering van hakies</i> 1 mark for the answer <i>1 punt vir antwoord</i>	(3)
6.5	6.5.1 $(15xy^2 - 27xyz - 3x^2yz^3) \div -3xy$ $= \frac{15xy^2}{-3xy} - \frac{27xyz}{-3xy} - \frac{3x^2yz^3}{-3xy}$ $= -5y + 9z + xz^3$ ✓✓✓ CA	1 mark for $-5y$ <i>1 punt vir $-5y$</i> 1 mark for $9z$ <i>1 punt vir $9z$</i> 1 mark for xz^3 <i>1 punt vir xz^3</i>	(3)

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**

6.5.2	$\sqrt[3]{27y^6}$ $= 3y^2 \checkmark \checkmark \mathbf{A}$	1 mark for 3 1 punt vir 3 1 mark for y^2 1 punt vir y^2	(2)
			[11]

QUESTION/VRAAG 7

7.1	$4(2d + 6) = 32 \checkmark \mathbf{A}$	1 mark for answer 1 punt vir antwoord	(1)
7.2	Learner 1: $4x - 2x = 3 - 7$, is correct <i>Leerder 1: $4x - 2x = 3 - 7$, is korrek $\checkmark \mathbf{A}$</i>	1 mark for answer 1 punt vir antwoord	(1)
7.3	7.3.1 $x^2 - 2x - 3 = 0$ $(x - 3)(x + 1) = 0$ $(x - 3) = 0$ or/of $(x + 1) = 0 \checkmark \mathbf{M}$ $x = 3$ or/of $x = -1 \checkmark \mathbf{A}$	1 mark for factorisation 1 punt vir faktoriserings 1 mark for both factors 1 punt vir beide faktore	(2)
	7.3.2 $\frac{p-3}{4} - \frac{p-1}{3} = \frac{p}{2} - 1$ LCD/KGD = 12 $3(p - 3) - 4(p - 1) = 6p - 12 \checkmark \mathbf{M}$ $3p - 9 - 4p + 4 = 6p - 12$ $-p - 5 = 6p - 12 \checkmark \mathbf{CA}$ $-p - 6p = -12 + 5$ $-7p = -7$ $p = 1 \checkmark \mathbf{A}$	1 mark for LCD 1 punt vir KGD 1 mark for removing brackets 1 punt vir verwydering van hakies 1 mark for answer 1 punt vir antwoord	(3)
7.4	Let Roy's travel time be x hours. Rose catches up with Roy after 5 hours. Rose's distance: $d = \frac{48 \text{ km}}{h} \times 5h$ $= 240 \text{ km.} \checkmark \mathbf{M}$ They travel the same distance. Roy's travelling time $\frac{240}{40} \checkmark \checkmark \mathbf{M}$ $= 6 \text{ hours.} \checkmark \mathbf{A}$ Roy travelled for 6 hours. <i>Laat Roy se ry-tyd x uur wees.</i> <i>Rose ry vir 5 uur om Roy in the haal.</i> <i>Rose se afstand: $d = \frac{48 \text{ km}}{h} \times 5h$</i> <i>$= 240 \text{ km} \checkmark \mathbf{M}$</i> <i>Hulle ry dieselfde afstand.</i> <i>Roy se reistyd: $t = \frac{240}{40} \checkmark \checkmark \mathbf{M}$</i> <i>$= 6 \text{ uur} \checkmark \mathbf{A}$</i> <i>Roy het 6 uur lank gery.</i>	1 mark for formula 1 punt vir formule 1 mark for substitution 1 punt vir vervanging 1 mark for solving the equation 1 punt vir oplos van die vergelyking 1 for answer 1 punt vir antwoord	

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**

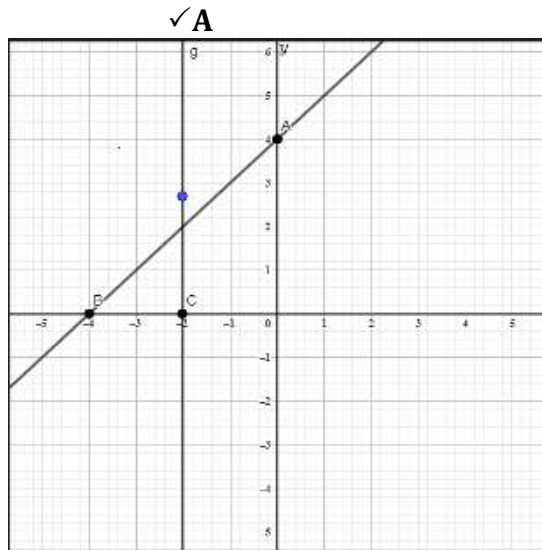
	OR/OF Distance/Afstand = 40 × time/tyd ✓M Rose = 48 × 5 ✓M = 240 km 40x = 240 ✓M x = 6 h Roy travelled for 6 hours. Roy ry vir 6 uur. ✓A OR/OF Let d = Rose's distance = Roy's distance Laat d = Rose se afstand = Roy se afstand They travelled the same distance. Hulle ry dieselfde afstand. ✓M Rose: d = 40km/h × 5h Let x = Roy's travelling time Laat x = Roy se reistyd Roy: d = 48 km/h × x ✓M $\frac{40 \text{ km}}{h} \times 5h = \frac{48 \text{ km}}{h} \times x \text{ ✓M}$ $240 \text{ km} = 48x$ $x = 6h \text{ ✓CA}$	Accept any correct reasoning or method to solve the problem. Aanvaar enige logiese redenasie en korrekte metode om die probleem op te los.	(4) [11]
--	---	--	------------------------

QUESTION/VRAAG 8

8.1	<table><tr><th>COLUMN A/ <i>KOLOM A</i></th><th>COLUMN B/ <i>KOLOM B</i></th></tr><tr><td>8.1.1</td><td>B ✓ A</td></tr><tr><td>8.1.2</td><td>C ✓ A</td></tr><tr><td>8.1.3</td><td>D ✓ A</td></tr><tr><td>8.1.4</td><td>A ✓ A</td></tr></table>	COLUMN A/ <i>KOLOM A</i>	COLUMN B/ <i>KOLOM B</i>	8.1.1	B ✓ A	8.1.2	C ✓ A	8.1.3	D ✓ A	8.1.4	A ✓ A	1 mark for each answer <i>1 punt vir elke antwoord</i>	(4)
COLUMN A/ <i>KOLOM A</i>	COLUMN B/ <i>KOLOM B</i>												
8.1.1	B ✓ A												
8.1.2	C ✓ A												
8.1.3	D ✓ A												
8.1.4	A ✓ A												
8.2	8.2.1	B (−4; 0) ✓ A	1 mark for coordinates of B <i>1 punt vir koördinate van B</i>	(1)									
	8.2.2	$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ ✓M}$ $= \frac{4}{4}$ $= 1 \text{ ✓CA}$	1 mark for the formula and substitution <i>1 punt vir formule en vervanging</i> 1 mark for answer <i>1 punt vir antwoord</i>	(2)									
	8.2.3	$y = x + 4 \text{ ✓A}$	1 mark for correct equation <i>1 punt vir korrekte vergelyking</i>	(1)									

**MARKING GUIDELINES/
NASIENRIGLYNE**
**MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9**

8.2.4 See the graph below./Kyk na die grafiek hieronder.



1 mark for the correct graph
1 punt vir korrekte grafiek

(1)

[9]

TOTAL: 75
TOTAAL: 75