



eduresourcza.com



**PROVINCIAL EXAMINATION/
PROVINSIALE EKSAMEN
NOVEMBER 2022
GRADE/*GRAAD* 9
MARKING GUIDELINES/
*NASIENRIGLYNE***

**MATHEMATICS/*WISKUNDE*
(*PAPER/VRAESTEL* 1)**

7 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
B✓A	B✓A	D✓A	C✓A	D✓A
[5]				

SECTION/AFDELING B

QUESTION/VRAAG 2

2.1	21 : 35 (÷ 7) = 3 : 5 ✓✓ A		1 mark for 3./1 punt vir 3. 1 mark for 5./ 1 punt vir 5.	(2)									
2.2.1	<table><tr><td>36</td><td>2</td></tr><tr><td>18</td><td>2</td></tr><tr><td>9</td><td>3</td></tr><tr><td>3</td><td>3</td></tr><tr><td></td><td>✓✓M</td></tr></table> $36 = 2^2 \times 3^2$ ✓ CA	36	2	18	2	9	3	3	3		✓✓M	2 marks for prime factorisation using ladder method./2 punte vir fatorisering met die leertjie-metode. 1 mark for each prime factor in exponential form./1 punt vir elke priemfaktor in eksponensiële vorm.	(3)
36	2												
18	2												
9	3												
3	3												
	✓✓M												
2.2.2	$540 = 2^2 \times 3^3 \times 5$ $36 = 2^2 \times 3^2$ LCM/KGV = $2^2 \times 3^3 \times 5 = 540$ ✓ A HCF/GGF = $2^2 \times 3^2 = 36$ ✓ A		1 mark for the LCM./1 punt vir die KGV. 1 mark for the HCF./1 punt vir die GGF.	(2)									
2.3	Indirect Proportion/ Indirekte verhouding. $4 \times x = 7 \times 12$ ✓ M $4x = 84$ ✓ M $x = 21$ ✓ CA 21 contractors will be needed to build the house in 4 days./21 kontrakteurs word benodig om die huis in 4 dae te bou.		1 mark for setting up indirect proportion equation./1 punt vir opstel van indirekte verhouding vergelyking. 1 mark for multiplication./1 punt vir vermenigvuldiging. 1 mark for answer./1 punt vir antwoord.	(3)									
				[10]									

MARKING GUIDELINES/NASIENRIGLYNE

MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9

QUESTION/VRAAG 3

3.1	Ascending order: <i>Stygende volgorde:</i> -62; -55; -43; 0; 8; 25 ✓ A	1 mark for all numbers arranged correctly./1 punt vir korrekte ranskikking van al die getalle.	(1)
3.2	$\frac{\sqrt{49} - 2}{3 + (-2)^3} \times 5$ $\frac{7 - 2}{3 - 8} \times 5$ $\frac{5}{-5} \times 5$ $= -5$	1 mark for 7 in numerator./1 punt vir 7 in die teller. 1 mark for -8 in denominator./1 punt vir -8 in die noemer. 1 mark for correct subtraction in both numerator and denominator./1 punt vir korrekte aftrekking in beide die teller en noemer. 1 mark for answer./1 punt vir antwoord.	(4)
			[5]

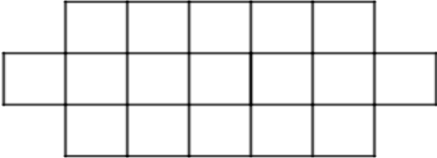
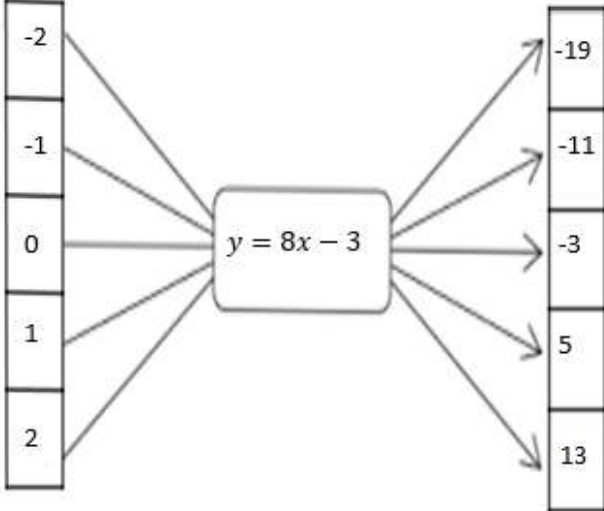
QUESTION/VRAAG 4

4.1	a^{-m} ✓ A	1 mark for answer./ 1 punt vir antwoord.	(1)
4.2	$\frac{p^{4x+4} \cdot p^{(-2x-2)}}{(p^2)^{x+1}}$ $= p^{4x+4+(-2x-2)-(2x+2)} \checkmark\checkmark\checkmark \text{ M}$ $= p^{4x-2x-2x+4-2-2}$ $= p^0 \checkmark \text{ CA}$ $= 1 \checkmark \text{ CA}$	1 mark for product law application./1 punt vir toepassing van die produkwet. 1 mark for quotient law application./1 punt vir toepassing van kwosiëntwet. 1 mark for multiplying a power with a power in denominator./1 punt vir vermenigvuldiging van magte in die noemer. 1 mark for simplifying by adding like terms./1 punt vir vereenvoudiging deur gelyksoortige terme bymekaar te tel. 1 mark for answer./1 punt vir antwoord.	(5)
			[6]

MARKING GUIDELINES/NASIENRIGLYNE

MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9

QUESTION/VRAAG 5

5.1	5.1.1	Sixth/Sesde  ✓✓A	2 marks for correct sixth arrangement./2 punte vir die korrekte sesde ranskikking	(2)
	5.1.2	$T_1 : 3(1) + \underline{\hspace{2cm}} = 2$ $T_1 : 3(1) + (-1) = 2$ $T_2 : 3(2) + \underline{\hspace{2cm}} = 5$ $T_2 : 3(2) + (-1) = 5$ $T_3 : 3(3) + \underline{\hspace{2cm}} = 8$ $T_3 : 3(3) + (-1) = 8$ $\therefore T_n = 3n - 1$ ✓✓A	1 mark for $3n$./1 punt vir $3n$. 1 mark for -1 ./1 punt vir -1 .	(2)
	5.1.3	$T_n = 3n - 1$ $101 = 3n - 1$ ✓ CA $102 = 3n$ $34 = n$ ✓ CA	1 mark for correct substitution./1 punt vir korrekte vervanging. 1 mark for correct answer./1 punt vir korrekte antwoord.	(2)
5.2		 ✓✓✓✓✓A	1 mark for each output value in the correct spot corresponding to the input value./1 punt vir elke uitvoergetal in die korrekte posisie in ooreenstemming met die invoergetal.	(5)
				[11]

MARKING GUIDELINES/NASIENRIGLYNE

MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9

QUESTION/VRAAG 6

6.1	6.1.1	$3y^3$ ✓ A	1 mark for answer./1 punt vir antwoord.	(1)
	6.1.2	$2x^3y + 5x^2 + 3xy^3$ ✓ A	1 mark for answer./1 punt vir antwoord.	(1)
6.2	6.2.1	$(x + y)^2$ $= x^2 + xy + xy + y^2$ $= x^2 + 2xy + y^2$ ✓✓✓ CA	1 mark for x^2 ./1 punt vir x^2 . 1 mark for $2xy$./1 punt vir $2xy$. 1 mark for y^2 ./1 punt vir y^2 .	(3)
	6.2.2	$\frac{(x^3 + x^2 - 2x)}{x^2 - 1}$ $= \frac{x(x^2 + x - 2)}{(x^2 - 1)} \text{ ✓ A}$ $= \frac{x(x + 2)(x - 1)}{(x + 1)(x - 1)} \text{ ✓✓ A}$ $= \frac{x(x + 2)}{x + 1} \text{ ✓ CA}$	1 mark taking x out as common factor./1 punt vir uithaal van x as gemene faktor 1 mark for each factor in numerator./1 punt vir elke faktor in die teller. $(x + 2)(x - 1)$. 1 mark for each factor in denominator./1 punt vir elke faktor in die noemer. $(x + 1)(x - 1)$. 1 mark for answer./1 punt vir antwoord.	(6)
				[11]

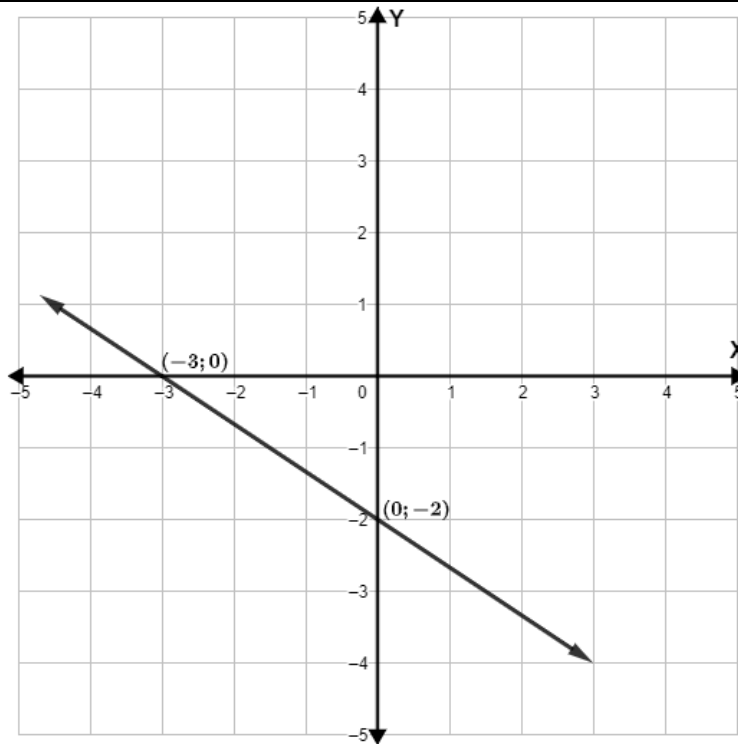
QUESTION/VRAAG 7

7.1	Gradient: 2 ✓ A y-intercept/y-afsnit: -5 ✓ A		1 mark for correct gradient./1 punt vir korrekte gradient of helling. 1 mark for correct y-intercept./1 punt vir regte y-afsnit.	(2)
7.2	7.2.1	$3y + 2x = -6$ $3(0) + 2x = -6$ ✓ M $2x = -6$ $x = -3$ ✓ CA	1 mark for substituting zero in the place of y./1 punt vir vervanging van y met nul. 1 mark for answer./1 punt vir antwoord.	(2)

MARKING GUIDELINES/NASIENRIGLYNE

MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9

7.2.2



✓✓✓CA

1 mark for plotting the x-intercept correctly./1 punt vir korrekte aanstip van x-afsnit.
1 mark for plotting the y-intercept correctly./1 punt vir korrekte aanstip van y-afsnit.
1 mark for correct shape./1 punt vir korrekte vorm.

(3)

7.3

$$A\left(-\frac{2}{3}; 1\right); B\left(-2; \frac{1}{2}\right)$$

$$\text{Gradient} = \frac{\text{vertical change}}{\text{horizontal change}} / \text{Gradient} = \frac{\text{vertikale verandering}}{\text{horisontale verandering}}$$

$$m = \frac{\frac{1}{2} - (1)}{-2 - \left(-\frac{2}{3}\right)} \checkmark \mathbf{M}$$

$$m = \frac{-\frac{1}{2}}{-\frac{4}{3}}$$

$$m = \frac{3}{8} \checkmark \mathbf{CA}$$

Learner may use any two of the three points given. Award full marks for the usage of any two of the three points correctly./
Leerder mag enige twee van gegewe drie punte gebruik. Ken volpunte toe vir die korrekte gebruik van enige twee punte.

$$y = mx + c$$

$$3 = \frac{3}{8}(0) + c$$

$$3 = c$$

Learner may use any of the three points given. Award full marks for the usage of any of the three points correctly.

Leerder mag enige van die drie gegewe punte gebruik. Ken volpunte toe vir die korrekte gebruik van enige van die drie punte.

$$\text{y-intercept} = 3/\text{y-afsnit} = 3$$

$$\therefore y = \frac{3}{8}x + 3 \checkmark \mathbf{CA}$$

1 mark for vertical change./1 punt vir vertikale verandering.
1 mark for horizontal change./1 punt vir horisontale verandering.

1 mark for correct gradient/slope./1 punt vir korrekte gradient of helling.

1 mark for answer./1 punt vir antwoord.

(4)

[11]

MARKING GUIDELINES/NASIENRIGLYNE

MATHEMATICS/WISKUNDE
(PAPER/VRAESTEL 1) GRADE/GRAAD 9

QUESTION 8/ VRAAG 8

8.1	$a = 2$ ✓ A		1 mark for answer./1 punt vir antwoord.	(1)
8.2	8.2.1	$\frac{-8}{y} + 2y = -6 ; y \neq 0$ $-8 + 2y^2 = -6y$ ✓ M $2y^2 + 6y - 8 = 0$ ✓ M $2(y^2 + 3y - 4) = 0$ ✓ M $2(y - 1)(y + 4) = 0$ ✓✓ M $y = 1$ or $y = -4$ ✓ CA	1 mark for multiplying all terms by y./ 1 punt vir vermenigvuldiging van alle terme met y. 1 mark for the standard form./1 punt vir standaardvorm. 1 mark for factoring out 2./1 punt vir gemene faktor 2. 1 mark for each factor./1 punt vir elke faktor. 1 mark for both answers./1 punt vir beide antwoorde.	(6)
	8.2.2	$\frac{4y+3}{5} = 5y - 12$ $\frac{4y+3}{5} = \frac{5y-12}{1}$ $4y + 3 = 5(5y - 12)$ ✓ M $4y + 3 = 25y - 60$ $4y - 25y = -60 - 3$ ✓ M $-21y = -63$ ✓ M $y = 3$ ✓ CA	1 mark for multiplying all terms by 5./ 1 punt vir vermenigvuldiging van elke term met 5. 1 mark for simplification./1 punt vir vereenvoudiging. 1 mark for subtracting like terms./ 1 punt vir aftrekking van gelyksoortige terme. 1 mark for answer./1 punt vir antwoord.	(4)
8.3	If/ as s ■ t equals/ gelyk is aan $t^2 + st$, and/en 4 ■ x = -3 , then/dan is $x^2 + 4x = -3$ ✓ M $x^2 + 4x + 3 = 0$ ✓ CA $(x + 1)(x + 3) = 0$ ✓✓ CA $x = -1$ or/of $x = -3$ ✓ CA		1 mark for substituting./1 punt vir vervanging. 1 mark for quadratic trinomial form./ 1 punt vir kwadrateiese drieterm. 1 mark for each factor./1 punt vir elke faktor. 1 mark for both answers./1 punt vir beide antwoorde.	(5)
				[16]
			TOTAL/ TOTAAL:	75