GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL EXAMINATION

PROVINSIALE EKSAMEN

JUNE/*JUNIE* 2023

GRADE/*GRAAD* 10

MARKING GUIDELINES
NASIENRIGLYNE

MATHEMATICS/*WISKUNDE* (PAPER/*VRAESTEL* 2)

6 pages/*bladsye*

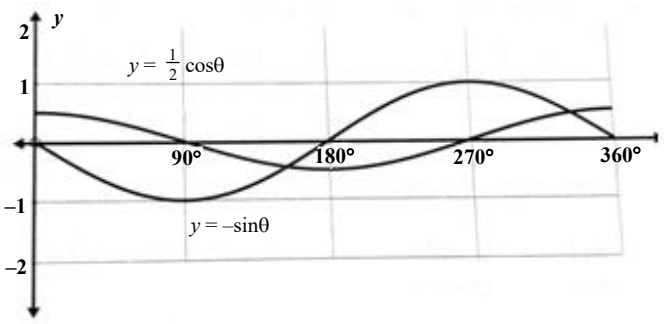
EXEMPLAR

QUESTION/*VRAAG* 1

1.1		$\cos 2A - \sin(\frac{1}{2}B)$ $\cos 2(38,6) - \sin\left(\frac{1}{2^\circ}\right)141,4°)$ $= 0,2215 \ldots - 0,9438 \ldots$ $= -0,72$	✓ 0,2215 ✓ 0,9438 ✓ Answer/*Antwoord*	(3)
1.2	1.2.1	$\sin 2\theta = 0,4$ $2\theta = 23,178$ $= 23,2°$	✓ 2θ = 23,178 ✓ Answer/*Antwoord*	(2)
	1.2.2	$3\sin(\frac{\theta}{2} - 20°) = 0,85$ $\sin(\frac{\theta}{2} - 20°) = 0,28333333$ $\frac{\theta}{2} - 20° = 16,459 \ldots$ $\frac{\theta}{2} = 36,459$ $\theta = 72,9°$	✓ 0,28333333 ✓ 16,4... ° ✓ 36,45... ° ✓ Answer/*Antwoord*	(4)
1.3	1.3.1	$\sin^2 45° - \cos 60°$ $= \frac{1}{2} - \frac{1}{2}$ $= 0$	✓ Substitution/*Vervang* ✓ Substitution/*Vervang* ✓ Answer/*Antwoord*	(3)
	1.3.2	$(\sin 30°)^2$ $= (\frac{1}{2})^2$ $= \frac{1}{4}$	✓ Substitution/*Vervang* ✓ Substitution/*Vervang* ✓ Answer/*Antwoord*	(3)
				[15]

EXEMPLAR

QUESTION/*VRAAG* 2

2.1		✓ $f(x)$ – shape/*vorm* ✓ $g(x)$ – shape/*vorm* ✓ (90° ; 0) ✓ (180° ; $-\frac{1}{2}$) ✓ (0° ; 0) ✓ (0° ; $\frac{1}{2}$)	(6)
2.2	$\frac{1+1}{2}$ $= 1$	✓ Max. – Min/*Maks – Min* ✓ Answer/*Antwoord*	(2)
2.3	360°	✓ Answer/*Antwoord*	(1)
2.4	1	✓ Answer/*Antwoord*	(1)
			[10]

QUESTION/*VRAAG* 3

3.1.	$M(\frac{x_1+x_2}{2} ; \frac{y_1+y_2}{2})$ $M(\frac{3+1}{2} ; \frac{9+(5)}{2}$ $M(2 ; 2)$		✓ Correct sub into formula/ *Korrekte vervang in formule* ✓ $x = 2$ ✓ $y = 2$	(3)
3.2	3.2.1	$m_{AC} = \frac{y_1-y_2}{x_2-x_1}$ $= \frac{9-}{3-(-}$ $m_{AC} = \frac{3}{4}$	✓ Substitution/*Vervang* ✓ $M_{AC} = \frac{3}{4}$	(2)
	3.2.2	$m_{BC} = \frac{y_2-y_1}{x_2-x_1}$ $= \frac{-5-3}{1-(-5)}$ $m_{BC} = \frac{4}{3}$	✓ Substitution/*Vervang* ✓ $m_{BC} = \frac{4}{3}$	(2)

EXEMPLAR

3.3	$\therefore \frac{3}{4}\times-\frac{4}{3}=-1$		✓ product of gradients/ *produk van gradiënte*	(1)
3.4	3.4.1	$AC=\sqrt{(-5-3)^2+(3-9)^2}$ $AC=\sqrt{100}$ AC = 10 *cm*	✓ Substitution/*Vervang* ✓ AC	(2)
	3.4.2	$CB=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ $CB=\sqrt{(1-(-5))^2+(-5-3)^2}$ $CB=\sqrt{100}=10\ cm$	✓ Substitution/*Vervang* ✓ BC	(2)
3.5	$\therefore$ Area of $\Delta ABC=\frac{1}{2}\times$ *base/basis* $\times$ *height/hoogte* Area of $\Delta ABC=\frac{1}{2}\times 10\times 10$ Area of $\Delta ABC = 50\ cm^2$		✓ Substitution/*Vervang* ✓ Answer/*Antwoord*	(2)
				[14]

EXEMPLAR

QUESTION/*VRAAG* 4

4.1	$B\hat{A}P = 90°$ diagonals of a rhombus bisect at 90°/ *hoeklyne van 'n ruit halveer op 90°*	✓ S ✓ R	(2)
4.2	$BP^2 = BA^2 + AP^2$ Pythagoras $BP^2 = 8^2 + 6^2$ $BP = 10$ *cm*	✓ S ✓ R ✓ Answer/*Antwoord*	(3)
4.3	$AC = \frac{1}{2}$ BP line drawn from midpoint parallel to 2nd side/ *lyn getrek vanaf middelpunt parallel met die 2de sy* AC = 5 *cm*	✓ S ✓ R	(2)
4.4	Area of/*Oppv van* ΔBAP $= \frac{1}{2} \times AB \times AP$ $= \frac{1}{2} \times 8 \times 6$ $= 24\ cm^2$ ∴ *Area* of/*Oppv van* ΔBHSP = 4 × Area of/*Oppv van ΔBAP* $= 4 \times 24$ $= 96\ cm^2$	✓ sub into area formula/ *vervang in oppv formule* ✓ Area of a triangle/ *Oppv van driehoek* ✓ method/*metode* ✓ Answer/*Antwoord*	(4)
			[11]
		TOTAL/*TOTAAL*:	**50**

EXEMPLAR

TAXONOMY LEVELS					
GRADE 10					
MATHEMATICS					
June 2023					
QUESTION	**KNOWLEDGE**	**ROUTINE PROCEDURES**	**COMPLEX PROCEDURES**	**PROBLEM SOLVING**	**TOTAL**
DESIRED %	**20%**	**35%**	**30%**	**15%**	**100%**
1.1	3				
1.2.1		2			
1.2.2			4		
1.3.1		3			
1.3.2		3			
2.1.			6		
2.2		2			
2.3		1			
2.4		1			
3.1		3			
3.2		5			
3.3		[illegible]			
4.1		2			
4.2					
4.3		2			
4.4			3	4	
Total	**3**	**33**	**14**		**50**
Actual %	**18**	**66**	**26**		**100**
Desired %	**20%**	**35%**	**30%**	**15%**	**100**

EXEMPLAR