



GAUTENG PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL EXAMINATION

PROVINSIALE EKSAMEN

JUNE/*JUNIE* 2023

GRADE/*GRAAD* 10

MARKING GUIDELINES

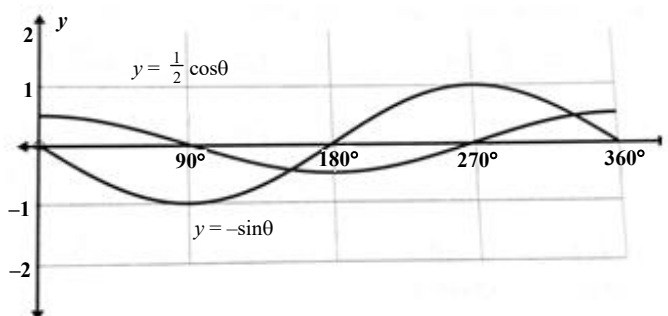
NASIENRIGLYNE

MATHEMATICS/<i>WISKUNDE</i> (PAPER/<i>VRAESTEL 2</i>)
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QUESTION/VRAAG 1

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

QUESTION/VRAAG 2

2.1		✓ $f(x)$ – shape/vorm ✓ $g(x)$ – shape/vorm ✓ $(90^\circ ; 0)$ ✓ $(180^\circ ; -\frac{1}{2})$ ✓ $(0^\circ ; 0)$ ✓ $(0^\circ ; \frac{1}{2})$	(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/ <i>Korrekte vervang in formule</i> ✓ $x = 2$ ✓ $y = 2$	(3)
3.2	3.2.1	$m_{AC} = \frac{y_1 - y_2}{x_2 - x_1}$ $= \frac{9 - 3}{3 - (-5)}$ $m_{AC} = \frac{3}{4}$	✓ Substitution/ <i>Vervang</i> ✓ $M_{AC} = \frac{3}{4}$	(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/ <i>Vervang</i> ✓ $m_{BC} = \frac{4}{3}$	(2)

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

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QUESTION/VRAAG 4

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

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		6			
4.1		2			
4.2		3			
4.3		2			
4.4			3	4	
Total	3	33	14		50
Actual %	18	66	26		100
Desired %	20%	35%	30%	15%	100