KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICS P2

NOVEMBER 2025

MARKING GUIDELINE

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MARKS: 100

This marking guideline consists of 10 pages.

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QUESTION 1			
1.1	$x = 2083$	A✓ answer	(1)
1.2	$\text{mean} = \frac{23718}{9}$ $\text{mean} = 2635,33$ **ANSWER ONLY: FULL MARKS** **PENALISE HERE FOR ROUNDING**	A✓✓ answer	(2)
1.3	Mpumalanga **ALSO ACCEPT** 1725	CA✓ answer	(1)
1.4	$\text{IQR} = Q_3 - Q_1$ $\text{IQR} = 4667,5 - 1332$ $= 3335,50$	CA✓ Q_3 and Q_1 CA✓ correct subst CA✓ answer	(3)
1.5	Number of schools = 23718(0,68%) = 161,28 ≈ 162 schools **ALSO ACCEPT** Number of schools = 23718(100,68%) = 23879,28 ≈ 23880 schools	A✓ A✓ A✓ A✓	(2)
			[9]

QUESTION 2			
2.1	60 learners	A ✓ answer	(1)
2.2	$\bar{x} = \frac{(25.6)+(35.11)+(45.9)+(55.7)+(65.8)+(75.13)+(85.6)}{60}$ $\bar{x} = \frac{3330}{60}$ $\bar{x} = 55,50$ **ANSWER ONLY: FULL MARKS** **OR** $\bar{x} = \frac{3330}{60}$ $\bar{x} = 55,50$	A ✓ correct midpts CA✓ 60 CA✓ 3330 CA✓ answer A ✓✓ 3330 CA✓ 60 CA✓ answer	(4)

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2.3	$\frac{33}{60}\times 100$ $=55\%$	A ✓ 33 CA✓ answer	(2)
			[7]
QUESTION 3			
3.1.1	$m_{SF}=\frac{y_2-y_1}{x_2-x_1}$ $m_{SF}=\frac{0+1}{3-0}$ $m_{SF}=\frac{1}{3}$ **ANSWER ONLY: FULL MARKS**	A✓ subst into correct formula CA✓ answer	(2)
3.1.2	$m_{QH}=m_{SF}=\frac{1}{3}$ $y=mx+c$ $4=\frac{1}{3}(4)+c$ $c=\frac{8}{3}$ $y=\frac{1}{3}x+\frac{8}{3}$ **OR** $m_{QH}=m_{SF}=\frac{1}{3}$ $y-y_1=m(x-x_1)$ $y-4=\frac{1}{3}(x-4)$ $y=\frac{1}{3}x+\frac{8}{3}$	CA✓ $m_{QH}=m_{SF}$ CA✓ correct subst CA✓ answer CA✓ $m_{QH}=m_{SF}$ CA✓ correct subst CA✓ answer	(3)
3.1.3	$2=\frac{1}{3}k+\frac{8}{3}$ $\frac{1}{3}k=-\frac{2}{3}$ $k=-2$ **OR**	CA✓ correct subst CA✓ answer $k<0$	

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	$\frac{4-2}{4-k}=\frac{1}{3}$ $\frac{2}{4-k}=\frac{1}{3}$ $k=-2$	A✓ correct subst CA✓ answer $k<0$	(2)
3.1.4	$\text{HF}=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$ $\text{HF}=\sqrt{(4-3)^2+(4-0)^2}$ $\text{HF}=\sqrt{17}$ / 4,12	A✓ correct subst CA✓ answer	(2)
3.1.5	$\text{M}\left(\frac{x_1+x_2}{2}\ ;\ \frac{y_1+y_2}{2}\right)$ $\text{M}\left(\frac{4+0}{2}\ ;\ \frac{4-1}{2}\right)$ $\text{M}\left(2\ ;\ \frac{3}{2}\right)$	A✓ correct subst CA✓ 2 CA✓ $\frac{3}{2}$	(3)
3.2	$m_{\text{AB}}=-\frac{1}{2}$ $\frac{-1-2}{p+5}=-\frac{1}{2}$ $-6=-p-5$ $p=1$	A✓ $m_{AB}=-\frac{1}{2}$ CA✓equate to M_{AB} CA✓ answer	(3)
			[15]
QUESTION 4			
4.1.1	$\frac{\sin x}{2}$ $=\frac{\sin 67,7°}{2}$ $=0,46$	A✓ correct subst CA✓ answer	(2)
4.1.2	$\cos(3y)$ $=\cos\left(3\left(52,3°\right)\right)$ $=-0,92$	A✓ correct subst CA✓ answer	(2)

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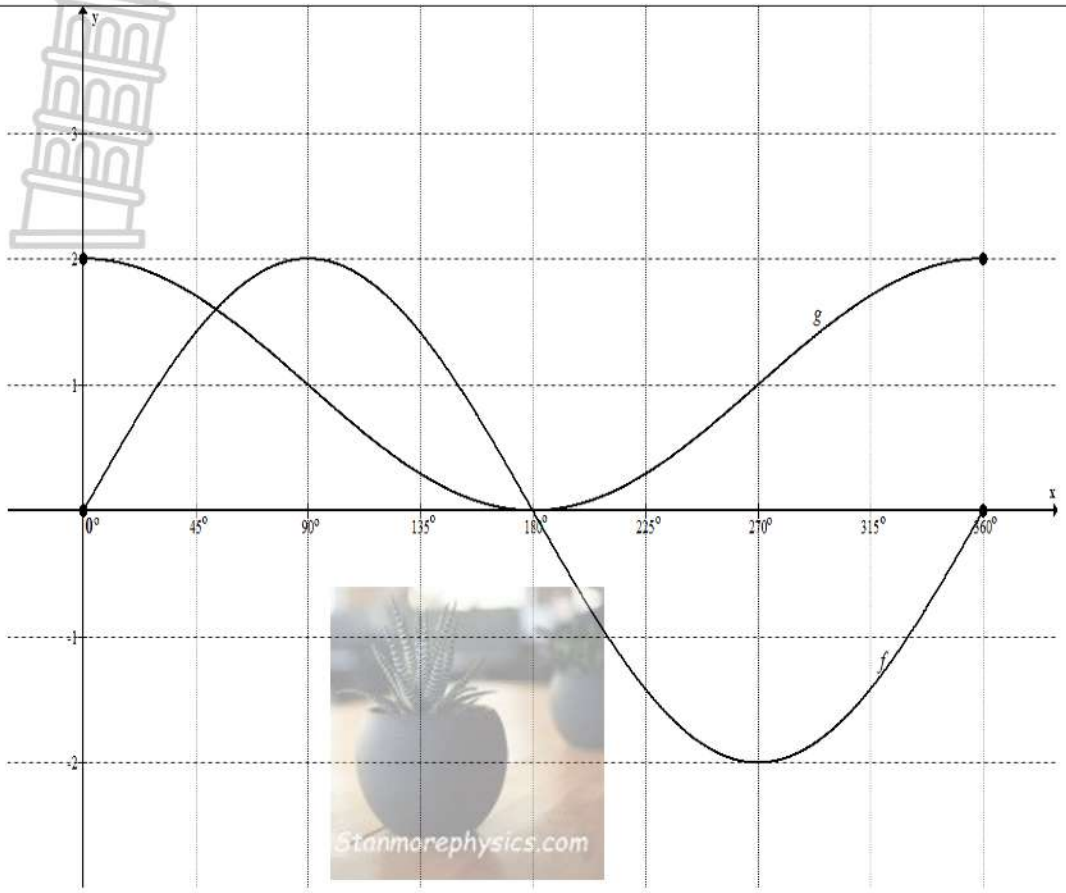
4.1.3	$\text{cosec}\left(\frac{x-y}{2}\right)$ $= \text{cosec}\left(\frac{67,7°-52,3°}{2}\right)$ $= \text{cosec}\ 7,7°$ $= \frac{1}{\sin 7,7°}$ $= 7,46$	A✓ correct subst CA✓ answer	(2)
4.2.1	$3+\cos 4\theta = 3,706$ $\cos 4\theta = 0,706$ $4\theta = 45,08961075°$ $\theta = 11,3°$	A✓ $\cos 4\theta = 0,706$ CA✓ $4\theta = 45,08961075°$ CA✓ answer	(3)
4.2.2	$4\tan\theta = 7 - 4\tan\theta$ $8\tan\theta = 7$ $\tan\theta = \frac{7}{8}$ $\theta = 41,2°$	A✓ $8\tan\theta = 7$ CA✓ $\tan\theta = \frac{7}{8}$ CA✓ answer	(3)
4.3.1	Third quadrant	A✓	(1)
4.3.2	Fourth quadrant	A✓	(1)
			[14]

QUESTION 5			
5.1.1	$x^2 + y^2 = r^2$ Pythagoras $(-12)^2 + (5)^2 = \text{OP}^2$ $\text{OP} = 13\text{ units}$ **ANSWER ONLY: FULL MARKS**	A✓ correct subst CA✓ answer	(2)
5.1.2	a) $\tan\theta = -\frac{5}{12}$	A✓	(1)

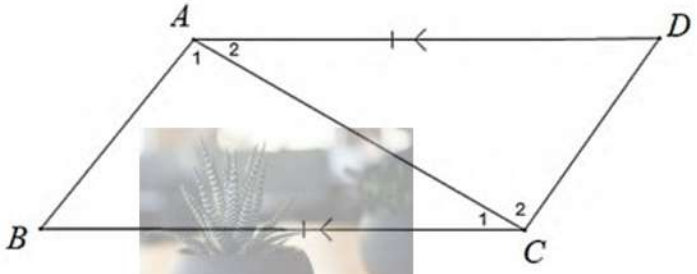
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	b) $(\sin\theta+\cos\theta)^2$ $=\left(\frac{5}{13}+\left(\frac{-12}{13}\right)\right)^2$ $=\left(-\frac{7}{13}\right)^2$ $=\frac{49}{169}$ **OR** $=\sin^2\theta+2\sin\theta\cos\theta+\cos^2\theta$ $=\left(\frac{5}{13}\right)^2+2\left(\frac{5}{13}\right)\left(\frac{-12}{13}\right)+\left(\frac{-12}{13}\right)^2$ $=\frac{25}{169}+\frac{-120}{169}+\frac{144}{169}$ $=\frac{49}{169}$	CA✓✓ correct subst CA✓ answer A✓ simplification CA✓ correct subst CA✓ answer	(3)
5.2.1	$\hat{S}_1=90°$ angles on str line $\cos 70°=\frac{WS}{40}$ WS = 13,68 units	A✓ $\hat{S}_1=90°$ A✓ correct subst into trig ratio CA✓ answer	(3)
5.2.2	$\cos\hat{W}=\frac{WM}{WT}$ $\cos 70°=\frac{40}{WT}$ WT=116,952176 ST=116,952176 – 13,68 ST = 103,27 units **OR** $\hat{T}=20°$ sum of Δ $\sin 20°=\frac{40}{WT}$ WT = 116,952176 ST=116,952176 – 13,68 ST = 103,27 units	A✓ trig ratio A✓ correct subst CA✓ WT=116,952176 CA✓ difference CA✓ answer A✓ S/R CA✓ correct subst into trig ratio CA✓ WT=116,952176 CA✓ difference CA✓ answer	
			[14]

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QUESTION 6			
6.1	Stanmorephysics.com	$g(x)$ A✓shape A✓Tpt $f(x)$ A✓shape A✓ x int	(4)
6.2	$360°$	A✓	(1)
6.3	$0 \le y \le 2$ or $y \in [0;2]$	CA✓ $y \ge 0$ CA✓ $y \le 2$	(2)
6.4	$g(x) - f(x) = 3$ $x = 270°$ **ANSWER ONLY: FULL MARKS**	A✓ CA✓	(2)
			[9]

QUESTION 7

7.1.1	$2w+10=70°$ corr $\angle$s AB//EG $w=30°$ $5x+45°+70°=180°$ sum $\angle$s in Δ $x=13°$	A✓ S/R A✓answer A✓ S/R A✓ answer	(4)
7.1.2	$y+70°+45°=180°$ sum $\angle$s in Δ $y=65°$ $z=70°$ opp $\angle$s of parm	A✓ S/R A✓ answer ✓S✓ R	(4)
7.2	 In ΔABC and ΔADC AC is common ✓S $\hat{C}_1=\hat{A}_2$ alt $\angle$s AD||BC ✓S/R BC = AD given ✓S $\therefore \Delta ABC \equiv \Delta ADC$ SAS ✓S/R $\hat{A}_1=\hat{C}_2$ congruent Δs ✓S $\therefore$ AB || DC alt $\angle$s equal $\therefore$ ABCD is a parm 2 pairs of opposite sides parallel **ALTERNATIVELY** AD = BC given ✓S AD || BC given ✓S $\therefore$ ABCD is a parm ✓S One pair of opposite sides equal and parallel ✓✓R		(5)

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7.3.1	MC = KC line through midpt // to 2nd side
	MC = 15
	
	MX = CX Line through midpt // 2nd side
	MC = MX + CX
	2MX = 15
	$MX = \frac{15}{2}$
		A✓ S/R
		A✓ 15
		
		A✓ S/R
			(3)

7.3.2	$KR = \frac{16}{5}$ $KR = \frac{16}{5} \times \frac{15}{2}$ KR = 24	A✓ correct subst A✓ answer	(2)
7.3.3	$MK^2 = 30^2$ $MK^2 = 900$ $MR^2 + KR^2 = 18^2 + 24^2$ $MR^2 + KR^2 = 900$ $M\hat{R}K = 90°$ converse Theorem of Pythagoras	A✓ CA✓	(2)
			[20]

QUESTION 8				
8.1	$A\hat{B}O = 30°$	OB bisects $A\hat{B}C$	A✓ S	(1)
8.2	$\hat{A} = A\hat{B}O$ $\hat{A} = 30°$ $\hat{O}_1 = A\hat{B}O + \hat{A}$ $\hat{O}_1 = 60°$ **OR** $\hat{A} = A\hat{B}O$ $A\hat{O}B = 120°$ $\therefore \hat{O}_1 = 60°$	$\angle s$ opp equal sides Ext $\angle s$ of Δ $\angle s$ opp equal sides sum of Δ $\angle s$ on a str line	A✓ S/R A✓ $\hat{A} = 30°$ A✓ answer A✓ S/R A✓ S/R A✓ S/R	(3)

8.3	In ΔABO and ΔCBO 1) BO is common 2) $A\hat{B}O = C\hat{B}O = 30°$ OB bisects $A\hat{B}C$ 3) $\hat{A} = A\hat{B}O = 30°$ $\angle$s opp = sides $\hat{C} = C\hat{B}O = 30°$ $\angle$s opp = sides $\therefore \hat{A} = \hat{C}$ $\therefore A\hat{O}B = C\hat{O}B$ sum of Δ $\Delta ABO \equiv \Delta CBO$ SAA	A✓ S/R A✓ S/R A✓ SAA	(3)
			[7]

QUESTION 9			
9.1	$V = \frac{4}{3}\pi r^3$ $V = \frac{4}{3}\pi(21)^3$ $V = 38792,4\ cm^3$	A✓ correct subst CA✓ answer **Provided π and *r* used in the formula**	(2)
9.2	$A = 4\pi r^2$ $A = 4\pi(21)^2$ $A = 5541,8\ cm^2$	A✓ correct subst CA✓ answer **Provided π and *r* used in the formula**	(2)
9.3	1:8 or $\frac{1}{8}$	CA✓ answer	(1)
			[5]

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TOTAL MARKS: 100