KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

MATHEMATICS P2

COMMON TEST

JUNE 2023

MARKING GUIDELINE



MARKS: 50

This marking guideline consists of 4 pages.

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QUESTION 1

1.1.1	$PQ=\sqrt{(x_2-x_1)^2+(x_2-x_1)^2}$ $PQ=\sqrt{(7-6)^2+(4-6)^2}$ $PQ=\sqrt{5}$	✓formula ✓substitution ✓answer	(3)
1.1.2	$\frac{x+6}{2}=\frac{7}{2}$; $\frac{x+6}{2}=\frac{7}{2}$ $x=1$ $y=1$ $S(1;1)$	✓ $\frac{x+6}{2}=\frac{7}{2};\frac{x+6}{2}=\frac{7}{2}$ ✓ $S(1;1)$	(2)
1.1.3	$m_{QR}=\frac{1}{2}$ $m_{RS}=-2$ But $m_{QR}\times m_{RS}=\frac{1}{2}\times -2$ $\therefore m_{QR}\times m_{RS}=-1$ $\therefore QR\perp RS$	✓ $m_{QR}=\frac{1}{2}$ ✓ $m_{RS}=-2$ ✓ $m_{QR}\times m_{RS}=\frac{1}{2}\times -2$ ✓ $m_{QR}\times m_{RS}=-1$	(4)
1.1.4	$RS=\sqrt{5}$ $RQ=\sqrt{(6-0)^2+(6-3)^2}$ $RQ=3\sqrt{5}$ $\tan \hat{RSQ}=3$ $R\hat{S}Q=71,57°$	✓ $RQ=3\sqrt{5}$ ✓ $\tan R\hat{S}Q=3$ ✓ $R\hat{S}Q=71,57°$	(3)
			[11]

QUESTION 2

2.1.1	$\hat{M}_1=\hat{Q}_2=x$	[Alternating $\angle$'s ; $PS \parallel QR$]	✓S✓R	
	$\hat{Q}_1=\hat{M}_1=x$	[$\angle$'s opp. = sides ; $PQ=PM$]	✓S✓R	(4)
2.1.2	$\hat{M}_3=90°-\hat{M}_1$ $\therefore \hat{M}_3=90^o-x$	[Adjacent $\angle$'s on a str. line]	✓S✓R	(2)

2.1.3	$\hat{M}_3 = \hat{S} = 2x$ [$\angle$'s opp. = sides ; $MR = SR$] $x + 90° + 2x = 180°$ [Adjacent $\angle$'s on a str. line] $x = 30°$ OR $\hat{M}^3 = 90^o - x$ [Adjacent on a str.line] $2x = 90^o - x$ $3x = 90^o$ $x = 30^o$	✓ $x + 90° + 2x = 180°$ ✓ $x = 30°$ ✓ $\hat{M}^3 = 90^o - x$ ✓ $x = 30°$	(2)
			[8]

QUESTION 3

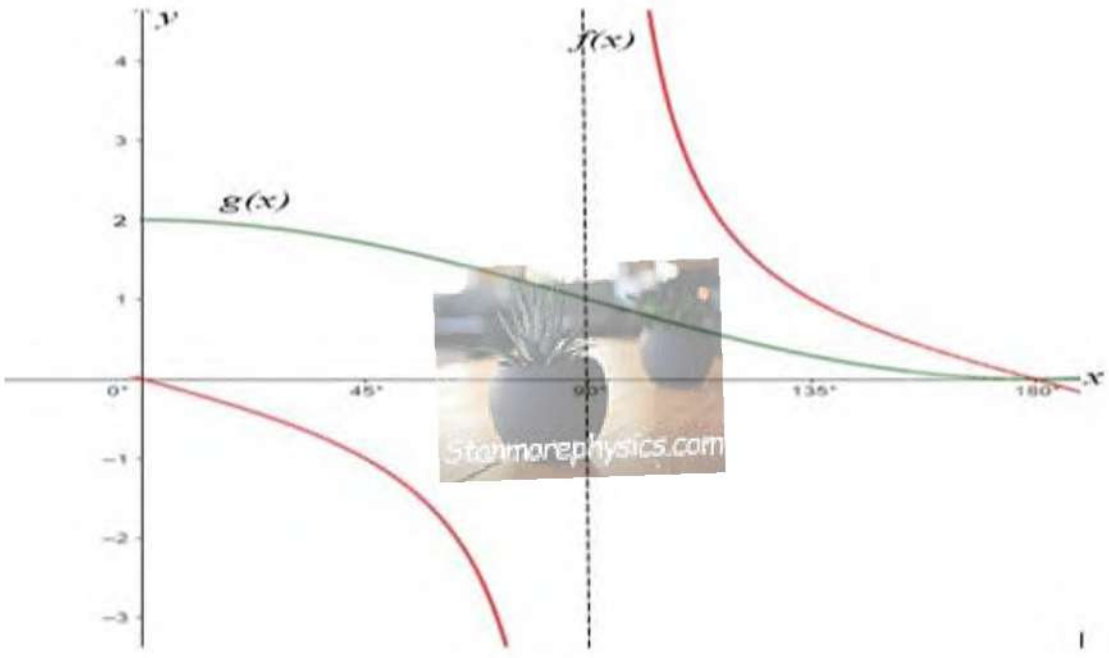
3.1.1	$A\hat{B}E = F\hat{D}C$ [Alternating $\angle$'s ; AB] $AB = DC$ [Opp. sides of parm] $BE = FD$ [given] $\therefore \Delta AEB \equiv \Delta CFD$ [SAS]	✓S/R ✓S/R ✓S/R ✓R	(4)
3.1.2	$B\hat{A}E = F\hat{C}D$ [$\equiv \Delta$'s] $B\hat{A}E + A\hat{B}E = \hat{A}_1$ [exterior $\angle\Delta$] Similarly, $F\hat{D}C + F\hat{C}D = \hat{F}_4$ [exterior $\angle\Delta$] $\therefore \hat{F}_4 = \hat{E}_1$ $AE \parallel CF$ [alternating $\angle$'s =]	✓S/R ✓S/R ✓ $\hat{F}_4 = \hat{E}_1$ ✓R	(4)
			[8]

QUESTION 4

4.1.1	$OP^2 = (4)^2 + (3)^2$ [Pythagoras] OP=5	✓S/R ✓answer	(2)
4.1.2	$\cos\theta = \frac{4}{5}$	✓ $\frac{4}{5}$	(1)
4.1.3	$= 1 - 2\left(\frac{3}{5}\right)^2$ $= \frac{7}{25}$	✓ $\frac{3}{5}$ ✓answer	(2)
4.2.1	2,736	✓answer	(1)

4.2.2	$=\frac{1}{\cos 37,1°}$ $=1,254$	✓ $\frac{1}{\cos 37,1°}$ ✓answer	(2)
4.3.1	$=\tan 45^{o}-5(1)+4\left(\frac{1}{\sqrt{3}}\right)^{2}$ $=1-5+\frac{4}{3}$ $=-4+\frac{4}{3}$ $=-\frac{8}{3}\ /\ -2\frac{2}{3}$	✓ $\tan 45°$ ✓1 ✓ $\frac{\sqrt{3}}{2}$ ✓1 ✓answer	(5)
4.4.1	$\sin(2\theta-25°)=\frac{1}{2}$ $2\theta-25°=30°$ $\theta=27,5°$	✓ $\sin(2\theta-25°)=\frac{1}{2}$ ✓ $2\theta-25°=30°$ ✓answer	(3)
			[16]

QUESTION 5

5.1.1			✓y- inter g ✓x –inter g ✓asympto f ✓ shape f (4)
5.1.2	Amplitude=1	✓1	(1)
5.1.3	$y\in[0;2]$ or $0\le y\le 2$	✓ $y\in[0;2]$	(1)
5.1.4	180°	✓ 180°	(1)
			[7]
		TOTAL:	**[50]**

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