Western Cape Government

METRO NORTH EDUCATION DISTRICT

SCHOOL-BASED ASSESSMENT

SEPTEMBER TRIAL COMMON EXAMINATION

MATHEMATICS P2/ WISKUNDE V2

MARKING GUIDELINE/ NASIENRIGLYNE

SEPTEMBER 2025

This Marking Guideline consists of 20 pages

NOTE:
• If a candidate answers a question TWICE, only mark the FIRST attempt.
• If a candidate has crossed out an attempt of a question and not redone the question, mark the crossed-out version.
• Consistent accuracy applies in ALL aspects of the marking memorandum. Stop marking at the second calculation error.
• Assuming answers/values to solve a problem is NOT acceptable.

NOTA:
• As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na
. • As 'n kandidaat 'n antwoord van 'n vraag doodtrek en nie oordoen nie, sien die doodgetrekte poging na.
• Volgehoue akkuraatheid word in ALLE aspekte van die nasienriglyne toegepas. Hou op nasien by die tweede berekeningsfout.
• Om antwoorde/waardes te aanvaar om 'n probleem op te los, word NIE toegelaat NIE.

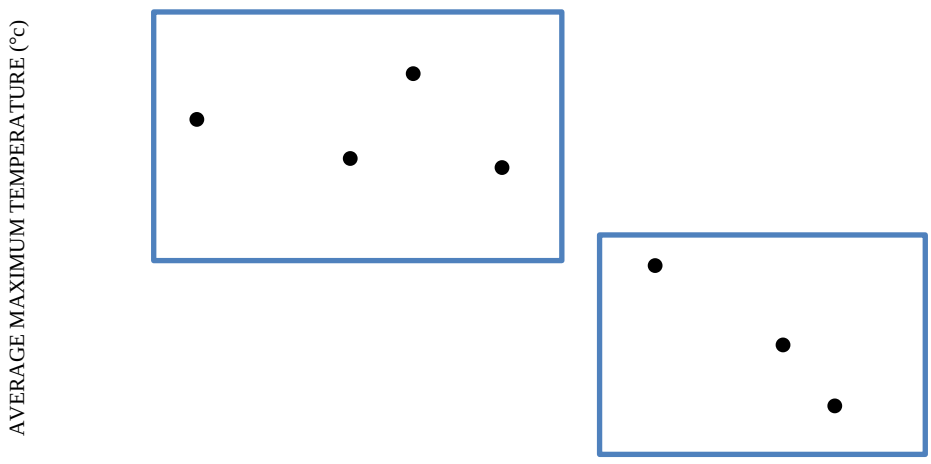
GEOMETRY • *MEETKUNDE*	
S	**A mark for a correct statement** **(A statement mark is independent of a reason)**
	'n Punt vir 'n korrekte bewering ***('n Punt vir 'n bewering is onafhanklik van die rede)***
R	**A mark for the correct reason** **(A reason mark may only be awarded if the statement is correct)**
	'n Punt vir 'n korrekte rede ***('n Punt word slegs vir die rede toegeken as die bewering korrek is)***
S/R	**Award a mark if statement AND reason are both correct**
	Ken 'n punt toe as die bewering EN rede beide korrek is

QUESTION 1 / VRAAG 1

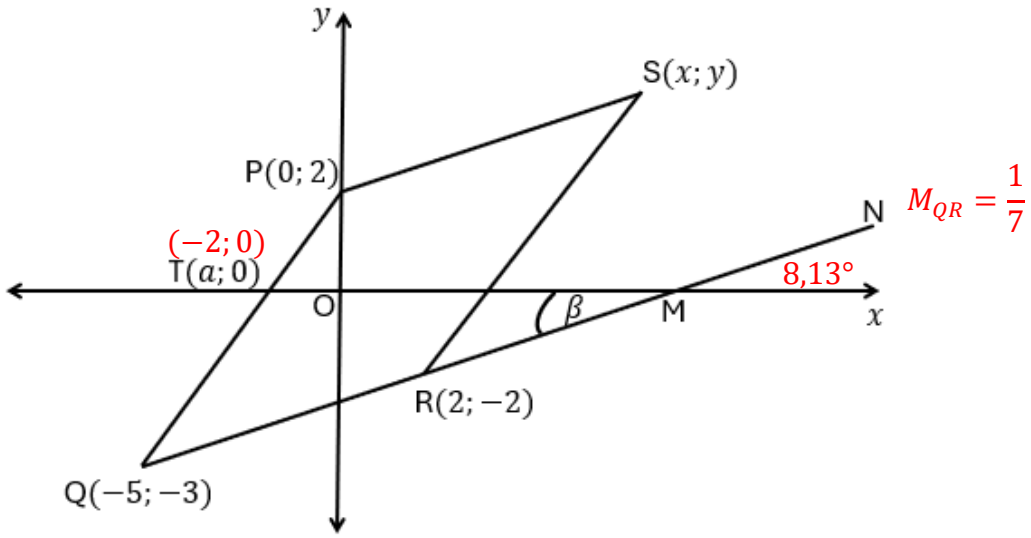
1.1.1	$\bar{x} = \frac{27 + 36 + \cdots + 96 + 104}{10}$ $= \frac{649}{10}$ $= 64{,}9$ AO full marks	✓ Sum of weights ✓ Answer Accept 65	(2)
1.1.2	$\sigma = 23{,}86$	✓✓Answer	(2)
1.1.3	1.1.1 if learner uses 64,9 points:/ *1.1.1 as leerder 64,9 punte gebruik:* $\bar{x} + \sigma = 88{,}76$ $\bar{x} - \sigma = 41{,}04$ There are 6 values within one standard deviation from the mean. / *Daar is 6 waardes binne een standaardafwyking van die gemiddelde.* **OR/ OF** CA from 1.1.1 if learner uses 65 points:/ *CA vanaf 1.1.1 as leerder 65 punte gebruik:* $\bar{x} + \sigma = 88{,}86$ $\bar{x} - \sigma = 41{,}14$ There are 6 values within one standard deviation from the mean. / *Daar is 6 waardes binne een standaardafwyking van die gemiddelde.*	✓ 88,76 ✓ 41,04 ✓6 ✓ 88,86 ✓ 41,14 ✓6	(3)

1.2.1	Skewed to the left/ negatively skewed *Skeef na links/ negatief skeef* $\bar{x} <$ median / Q_2 **OR** The data is more spread out between Q_1 and Q_2 than between Q_2 and Q_3. **OR** Or any similar answer	✓ Answer ✓ Reason	(2)
			[9]

QUESTION 2 / VRAAG 2

2.1	SCATTER DIAGRAM OF LATITUDE LINES AND THE AVERAGE MAXIMUM TEMPERATURES FOR APRIL  	✓first 4 coordinates ✓last 3 coordinates (If learner connected dots, panelise 1 mark.)	(2)
2.2	$\hat{y} = a + bx$ a = 40,27 b = −0,51 $y = 40{,}27 - 0{,}51x$	✓a ✓b ✓Equation	(3)
2.3	$y = 40{,}27 - 0{,}51x$ $y = 40{,}27 - 0{,}51(40)$ $y = 19{,}87$ Accept 19,85 (Calculator)	AO full marks ✓Subst. ✓Answer Accept 20	(2)
2.4	$r = -0{,}91$ The correlation is very strong negative. / *Die korrelasie is baie sterk negatief.*	✓r ✓Strong ✓Negative	(3)
			[10]

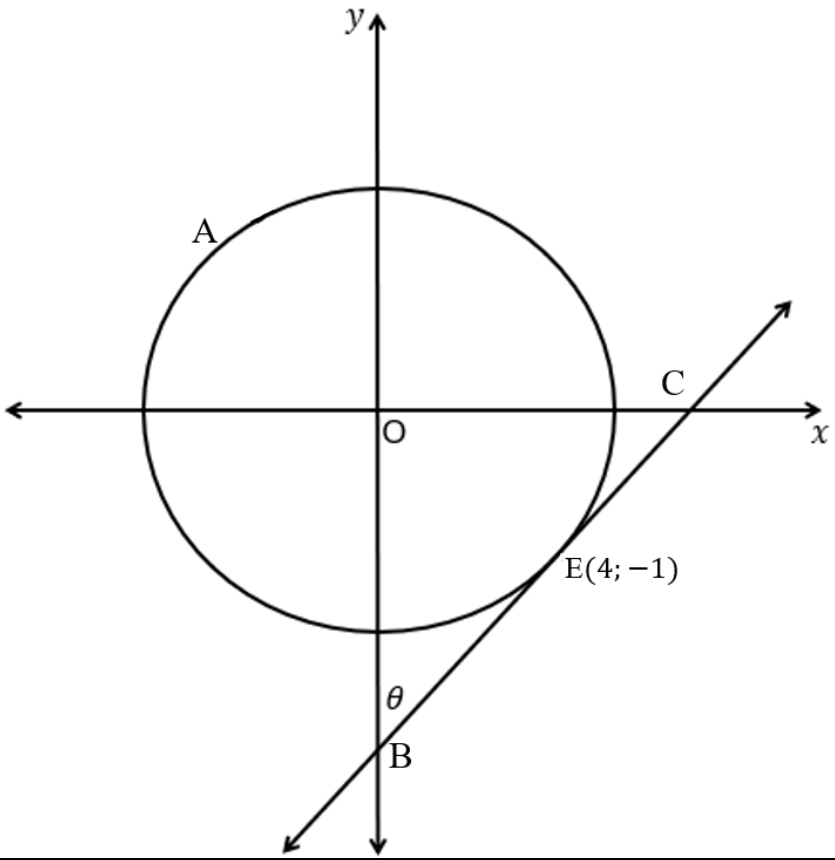
QUESTION 3 / VRAAG 3



3.1	$m_{QR} = \frac{y_2 - y_1}{x_2 - x_1}$ $m_{QR} = \frac{-3-(-2)}{-5-2}$ $m_{QR} = \frac{1}{7}$ AO full marks	✓ Subst. ✓ Answer	(2)
3.2	$\tan\theta = \frac{1}{7}$ $\theta = 8{,}13°$ $\beta = 8{,}13°$ AO full marks	✓ $\tan\theta = \frac{1}{7}$ (subs) ✓ $\theta = 8{,}13°$ ✓ S	(3)
3.3	$m_{PQ} = \frac{-3-(2)}{-5-0}$ $m_{PQ} = 1$ $y - 2 = 1(x - 0)$ $y = x + 2$ $0 = a + 2$ $a = -2$ **OR** $m_{PQ} = m_{PT}$ $\frac{-3-(2)}{-5-0} = \frac{2-0}{0-a}$ $\frac{-5}{-5} = \frac{2}{-a}$ $a = -2$	✓ $m = 1$ ✓ straight line / subs ✓ $y = 0$ ✓ $a = -2$ ✓ Equation ✓ subs in correct formla ✓ Simplify ✓ $a = -2$	(4)

3.4	$S(0+7;2+1)$ $S(7;3)$	✓ 7 ✓ 3	(2)
3.5	PR: $M_{PR}\left(\frac{0+2}{2};\frac{2-2}{2}\right) = M_{PR}(1;0)$ QS: $M_{QS}\left(\frac{-5+7}{2};\frac{-3+3}{2}\right) = M_{QS}(1;0)$ $\therefore M_{PR} = M_{QS} = (1;0)$ $\therefore$ the diagonals bisect each other/ *die hoeklyne halveer mekaar.*	✓ sub in correct formula ✓ M_{PR} ✓ M_{QS}	(3)
3.6	$PQ = \sqrt{(-5-0)^2+(-3-2)^2} = 5\sqrt{2} = \sqrt{50} =$ 7,07 $QR = \sqrt{(-5-2)^2+(-3+2)^2} = 5\sqrt{2} = \sqrt{50} =$ 7,07 $\therefore PQ = QR$ $\therefore PQR$ is an isosceles triangle/ *PQR is 'n gelykbenige driehoek*	✓ sub in correct formula ✓ PQ ✓ QR	(3)
3.7	**Rhombus**, parallelogram with one pair adjacent sides = / ***Ruit***, *parallelogram met een paar aangrensende sye =* **OR/ OF** **Rhombus/ *Ruit***, $m_{PR} \times m_{QS} = -2 \times \frac{1}{2} = -1$ $\therefore$ diagonals bisect perpendicular / *hoeklyne halveer loodreg*	✓ Rhombus ✓ Reason ✓ Rhombus ✓ Reason	(2)
3.8	$\beta = 8{,}13°$ (from 3.2) $m_{PQ} = 1$ (from 3.3) $P\hat{T}M = \tan^{-1} 1$ $P\hat{T}M = 45°$ $\hat{Q} = 45° - 8{,}13°$ $\hat{Q} = 36{,}87°$	✓$m_{PQ} = 1$ ✓ 45° ✓ Answer	(3)
			[22]

QUESTION 4 / VRAAG 4

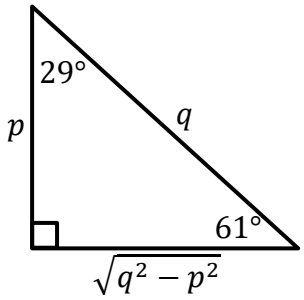


4.1	$x^2 + y^2 = r^2$ $(4)^2 + (-1)^2 = r^2$ $r^2 = 17$ $r = \sqrt{17}$ AO full marks $x^2 + y^2 = 17$	✓ Subst. ✓ Answer ✓ Answer	(3)
4.2	$\text{Midpoint}_{AE} = \left(\frac{x+4}{2}; \frac{y-1}{2}\right)$ $= (0; 0)$ $\frac{x+4}{2} = 0$ $x = -4$ $\frac{y-1}{2} = 0$ $y = 1$ AO full marks $A(-4; 1)$	✓ -4 ✓ 1	(2)

4.3	$m_{OE} = \frac{y_2 - y_1}{x_2 - x_1}$ $m_{OE} = \frac{-1-(0)}{4-0}$ $m_{OE} = -\frac{1}{4}$ $m_{BC} \times m_{OE} = -1$ $m_{BC} = 4$ $y-(-1) = 4(x-4)$ $y = 4x - 16 - 1$ $y = 4x - 17$ **OR** $m_{OE} = \frac{y_2 - y_1}{x_2 - x_1}$ $m_{OE} = \frac{-1-(0)}{4-0}$ $m_{OE} = -\frac{1}{4}$ $y = 4x + c$ $-1 = 4(4) + c$ $c = -17$ $y = 4x - 17$	✓ Substitute ✓ Answer ✓ subst m_{BC} and $(4;-1)$ ✓ Answer ✓ Substitute ✓ Answer ✓ Subst m_{BC} and $(4;-1)$ ✓ Answer	(4)
4.4	$y = 4x$	✓✓Answer	(2)
4.5	$OS = 3OE$ $OS^2 = 9OE^2$ $(a-0)^2 + (b-0)^2 = 9(17) = 153$ $a^2 + b^2 = 153$ ……..(1) $M_{OE} = M_{OS} = -\frac{1}{4}$ $\frac{0-b}{0-a} = -\frac{1}{4}$ $a = -4b$……..(2) Substitute (2) into (1): $(-4b)^2 + b^2 = 153$ $16b^2 + b^2 = 153$ $17b^2 = 153$ $b^2 = 9$ $b = \pm 3$ But $b < 0$ therefor $b = -3$ $a = -4(-3) = 12$ $S(12;-3)$ **OR**	✓ Distance ✓ 17 ✓ $-\frac{1}{4}$ (CA from 4.3) ✓ a in terms of b ✓ Subst. ✓ Value of b ✓ Value of a	(7)

	$OS = 3OE$ $OS = 3\sqrt{17}$ $\therefore ES = OS - OE$ $= 3\sqrt{17} - \sqrt{17}$ $= 2\sqrt{17}$	✓ $2\sqrt{17}$	
	$(4-a)^2 + (-1-b)^2 = (2\sqrt{17})^2$ $(4-a)^2 + (-1-b)^2 = 68$	✓ Sub in distance form	
	$M_{OE} = M_{OS} = -\frac{1}{4}$	✓ $-\frac{1}{4}$ (CA from 4.3)	
	$\frac{0-b}{0-a} = -\frac{1}{4}$ $a = -4b$……..(2)	✓ a in terms of b	
	$(4+4b)^2 + (-1-b)^2 = 68$ $16 + 32b + 16b^2 + 1 + 2b + b^2 = 68$ $17b^2 + 34b - 51 = 0$ $b^2 + 2b - 3 = 0$ $(b+3)(b-1) = 0$	✓ Subst.	
	$b = -3$ or $b \neq 1$ But $b < 0$	✓ Value of b	
	$a = -4(-3)$ $a = 12$	✓ Value of a	
	$S(12;-3)$		
	OR		
	$OE = \sqrt{17}$ $ES + OE = 3OE$ $\therefore ES = 2OE = 2\sqrt{17}$	✓ $2\sqrt{17}$	
	Equation of OS: $y = -\frac{1}{4}x$ $\therefore S(x; -\frac{1}{4}x)$	✓ $-\frac{1}{4}$ (CA from 4.3) ✓ coordinate	
	$\therefore ES = \sqrt{(4-x)^2 + (-1-y)^2} = 2\sqrt{17}$ $16 - 8x + x^2 + 1 - \frac{1}{2}x + \frac{1}{16}x^2 = 4.17$ $17x^2 - 136x - 816 = 0$ $x^2 - 8x - 48 = 0$ $(x+4)(x-12) = 0$ $x = -4$ *or* $x = 12$ $x > 0$	✓ Sub in distance form ✓value of x	
	$\therefore y = -\frac{1}{4}(12) = -3$ $\therefore S(12;-3)$	✓ Subst. ✓ Value of y	
			[18]

QUESTION 5 / VRAAG 5

5.1.1	$\sin 61° = \frac{p}{q}$  $\cos 151°$ $= \cos(180° - 29°)$ $= -\cos 29° = -\sin 61°$ $= -\frac{p}{q}$ **OR** $\cos 151°$ $= \cos(90° + 61°)$ $= -\sin 61°$ $= -\frac{p}{q}$	✓ $\sqrt{q^2 - p^2}$ / $-\sin 61°$ ✓ Reduction ✓ Answer ✓ Reduction ✓ $\sqrt{q^2 - p^2}$ / $-\sin 61°$ ✓ Answer	(3)

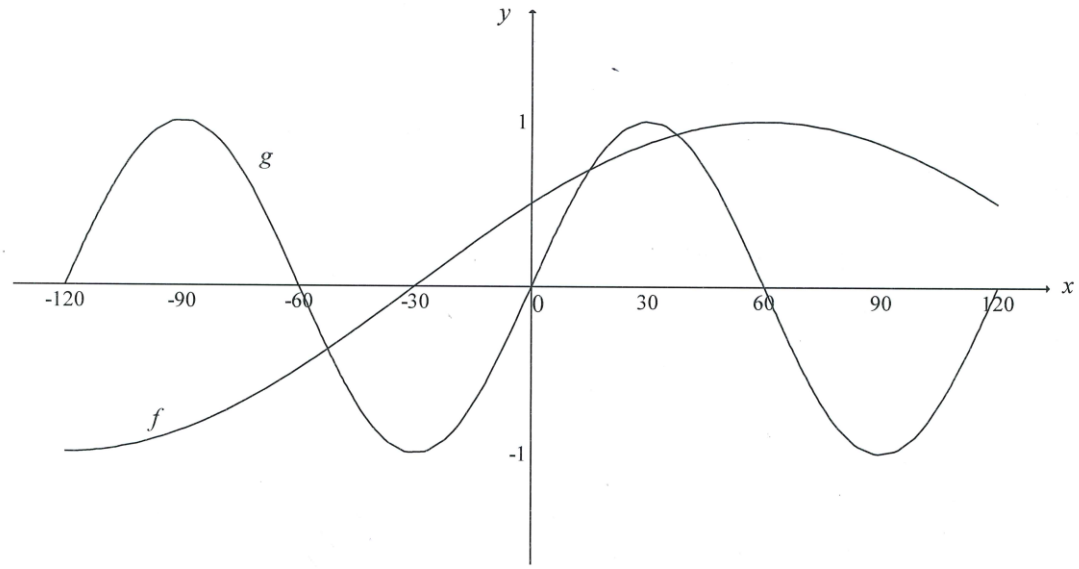
5.1.2	$\sin 122°$ $= \sin 2(61°)$ $= 2\sin 61°.\cos 61°$ $= 2\left(\frac{p}{q}\right)\left(\frac{\sqrt{q^2-p^2}}{q}\right)$ $= \frac{2p\sqrt{q^2-p^2}}{q^2}$ **OR/ OF** $\sin(180° - 58°)$ $= \sin 58°$ $= \sin 2(29°)$ $= 2\sin 29°\cos 29°$ $= 2\left(\frac{\sqrt{q^2-p^2}}{q}\right)(\frac{p}{q})$ $= \frac{2p\sqrt{q^2-p^2}}{q^2}$	✓Double angle ✓ Subst. ✓ Answer ✓Double angle ✓ Substitute ✓ Answer	(3)

5.1.3	$\cos 31°$ $= \cos(61° - 30°)$ $= \cos 61° \cos 30° + \sin 61° \sin 30°$ $= \left(\frac{\sqrt{q^2-p^2}}{q}\right)\left(\frac{\sqrt{3}}{2}\right) + \left(\frac{p}{q}\right)\left(\frac{1}{2}\right)$ $= \frac{\sqrt{3}.\sqrt{q^2-p^2}}{2q} + \frac{p}{2q}$ $= \frac{\sqrt{3}.\sqrt{q^2-p^2}+p}{2q}$ $= \frac{\sqrt{3(q^2-p^2)}+p}{2q}$ **OR** $= \cos(60° - 29°)$ $= \cos 60° \cos 29° + \sin 60° \sin 29°$ $= \left(\frac{1}{2}\right)\left(\frac{p}{q}\right) + \left(\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{q^2-p^2}}{q}\right)$ $= \frac{p}{2q} + \frac{\sqrt{3}.\sqrt{q^2-p^2}}{2q}$ $= \frac{p+\sqrt{3}.\sqrt{q^2-p^2}}{2q}$ $= \frac{p+\sqrt{3(q^2-p^2)}}{2q}$	✓Compound angle ✓Expansion ✓Substitute ✓Answer ✓Compound angle ✓Expansion ✓Substitute ✓Answer	(4)
5.2	$\frac{\sin(-x).\sin(180° - x) + \cos(90° + x)}{-\sin(360° - x) - \tan 315°}$ $= \frac{-\sin x \,.\sin x + (-\sin x)}{\sin x + \tan 45°}$ $= \frac{-\sin x(\sin x + 1)}{\sin x + 1}$ $= -\sin x$	✓$-\sin x$ and $\sin x$ ✓$-\sin x$ ✓$\sin x$ ✓$\tan 45°$ ✓Factorization ✓Answer	(6)

5.3.1	$\text{LHS} = \cos(A + 45°)$ $= \cos A \cos 45° - \sin A \sin 45°$ $= \frac{\cos A}{\sqrt{2}} - \frac{\sin A}{\sqrt{2}}$ $= \frac{\cos A - \sin A}{\sqrt{2}}$ $= \text{RHS}$ **OR/OF** $\text{LHS} = \cos(A + 45°)$ $= \cos A \cos 45° - \sin A \sin 45°$ $= \cos A \,.\, \frac{\sqrt{2}}{2} - \sin A \,.\, \frac{\sqrt{2}}{2}$ $= \frac{\sqrt{2}}{2}(\cos A - \sin A)$ $\text{RHS} = \frac{\cos A - \sin A}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$ $= \frac{\sqrt{2}(\cos A - \sin A)}{2}$ $=\text{LHS}$	✓Expansion ✓Subst. ✓Simplification ✓Expansion ✓Subs $\checkmark \times \frac{\sqrt{2}}{\sqrt{2}}$	(3)
5.3.2	$\cos(A + 45°) = \frac{\frac{1}{\sqrt{2}}}{\sqrt{2}}$ $\cos(A + 45°) = \frac{1}{2}$ Reference angle /Verwysingshoek $= 60°$ $A + 45° = 60°$ $A = 15°$	✓Subst. $\checkmark\frac{1}{2}$ ✓Reference angle ✓15°	(4)
5.4	$2\sin x \,.\, \cos x - 0{,}8 = 0$ $\sin 2x = 0{,}8$ Reference angle / Verwysingshoek$= 53{,}13°$ Q_1: $2x = 53{,}13° + k.360° \quad k \in \text{Z}$ $x = 26{,}57° + k.180°$ Q_2: $2x = 180° - 53{,}13° + k.360°$ $x = 63{,}44° + k.180°$	✓ Double angle ✓ Reference angle $\checkmark k.360°$ and $k \in \text{Z}$ ✓ Q_1: 26,57° ✓ Q_2: 63,43° ✓ $k.180°$	(6)

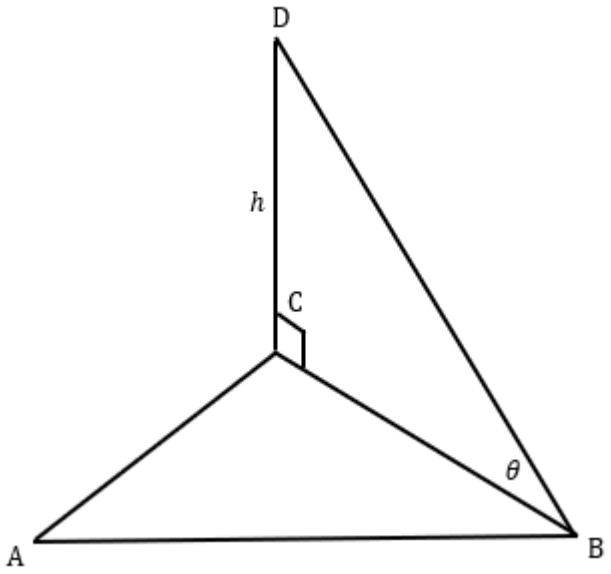
5.5	$\sqrt{-\cos^2(90° - M) - \cos M.\cos(-M)}$ $= \sqrt{-\sin^2 M - \cos^2 M}$ $= \sqrt{-(\sin^2 M + \cos^2 M)}$ $= \sqrt{-1}$ Not real/ nie-reël	✓$-\sin^2 M$ ✓$-\cos^2 M$ ✓Factorization ✓-1 or answer	(4)
			[33]

QUESTION 6 / VRAAG 6



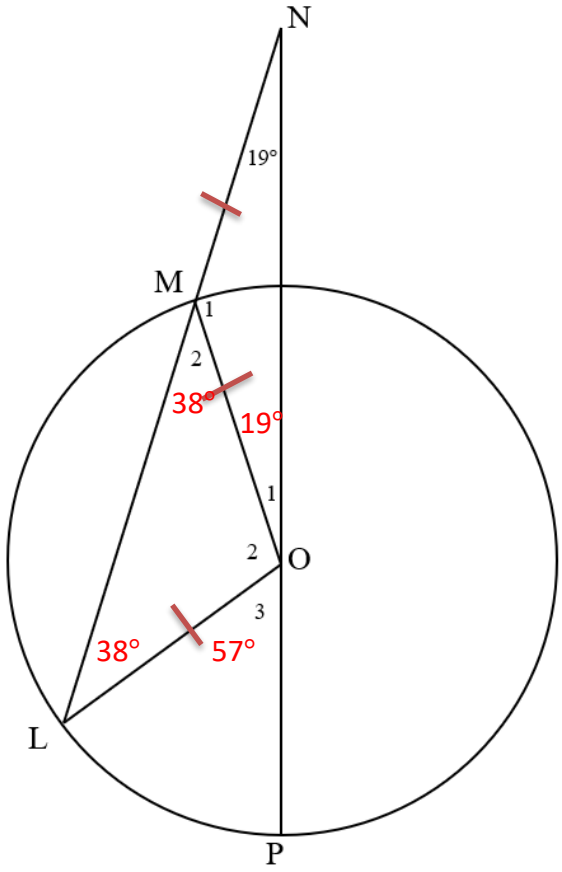
6.1	$120°$	✓Answer	(1)
6.2	$a = 3$	✓Answer	(1)
6.3	$-2 \leq y \leq 0$ **OR** $y \in [-2; 0]$	✓Values ✓Notation ✓Values ✓Notation	(2)
6.4	$h(x) = -\cos(x - 60° - 30°)$ $= -\cos(x - 90°)$ $= -\sin x$	✓− ✓$-90°$ ✓Simplification	(3)
6.5	$-30° < x < 60°$	✓Critical values ✓ Notation	(2)
			[9]

QUESTION 7 / VRAAG 7

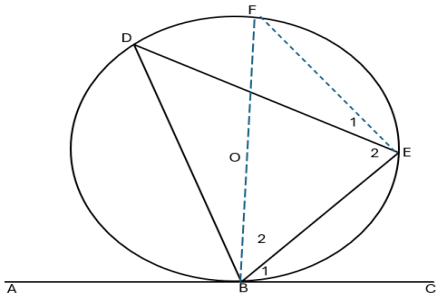
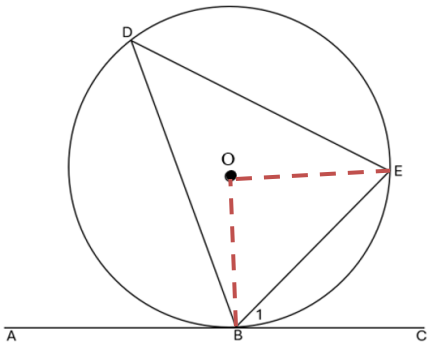


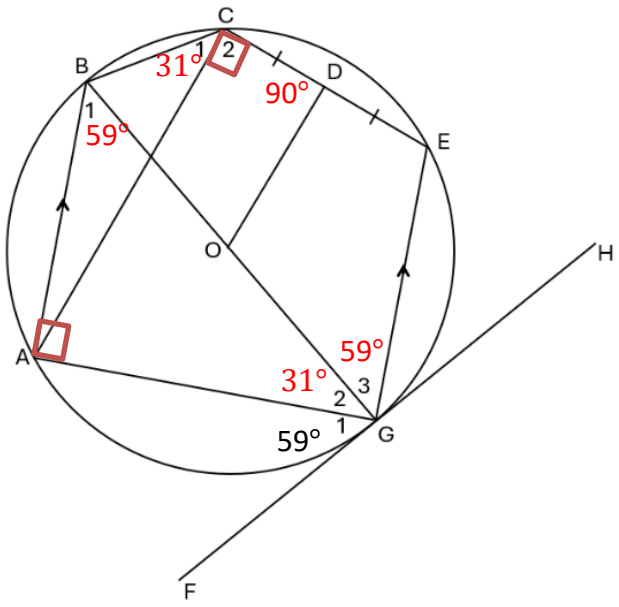
7.1	$\tan\theta = \frac{h}{CB}$ $CB = \frac{h}{\tan\theta}$ **OR** $\frac{CB}{\sin(90° - \theta)} = \frac{h}{\sin\theta}$ $CB = \frac{h.\cos\theta}{\sin\theta}$ $= \frac{h}{\tan\theta}$ OR $h\cot\theta$	✓Ratio ✓Answer ✓Ratio ✓Answer	(2)
7.2	$A\hat{C}B = 180° - \alpha - \beta = 180° - (\alpha + \beta)$ $\frac{AB}{\sin[180° - (\alpha+\beta)]} = \frac{(\frac{h}{\tan\theta})}{\sin\alpha}$ $\frac{AB}{\sin(\alpha+\beta)} = \frac{h}{\tan\theta.\sin\alpha}$ $AB = \frac{h\sin(\alpha+\beta)}{\tan\theta.\sin\alpha}$	✓ $A\hat{C}B = 180° - (\alpha + \beta)$ ✓ Correct use of sine rule ✓ subst. ✓ Reduction	(4)
7.3	$AB = \frac{31{,}2\sin(52{,}2 + 23{,}5)}{\tan 42{,}3 . \sin 52{,}2}$ $AB = 42{,}05m$ AO full marks	✓ Substitution ✓ Answer	(2)
			[8]

QUESTION 8 / VRAAG 8

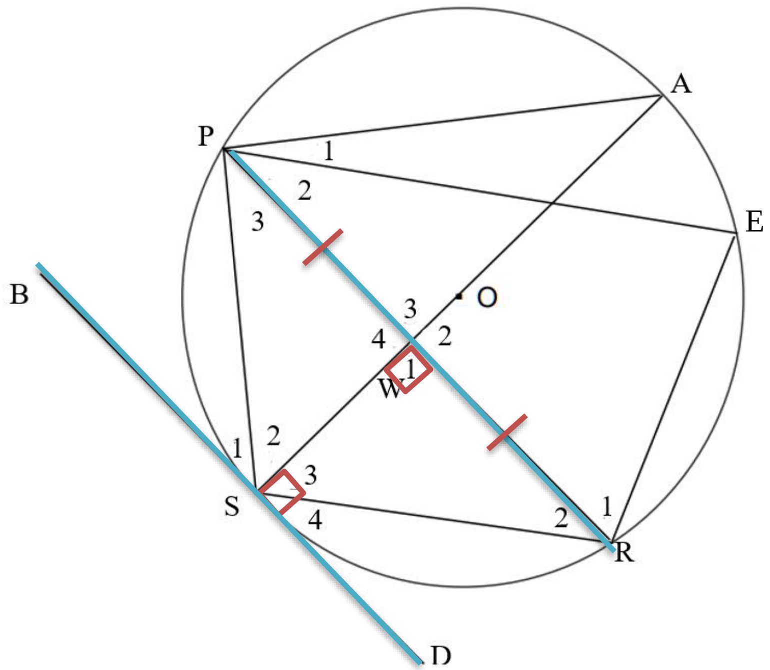
			
	$\hat{O}_1 = 19°$ (angles opp = sides / *hoeke teenoor = sye*) $\hat{M}_2 = 19° + 19° = 38°$ (ext $\angle$ *of* Δ/ *buite* $\angle$ *van* Δ) $\hat{L} = 38°$ (angles opp = radii / *hoeke teenoor = radiusse*) $\hat{O}_3 = 57°$ (ext $\angle$ *of* Δ / *buite* $\angle$ *van* Δ)	✓ S ✓ S / R ✓ S ✓R ✓ S / R	(5)
			[5]

QUESTION / VRAAG 9

9.1	Interior opposite angle/ *teenoorstaande hoek*	✓Answer	(1)
9.2	 Construction: Draw diameter BOF and join FE/ *Konstruksie: Teken deursnee BOF en verbind FE*	✓ Construction	
	Let EBC= x $E_1 + E_2 = 90°$ (∠ in semi ⊙ / *∠ in semi ⊙*) $B_2 = 90° - x$ (tan⊥radius / *raaklyn⊥ radius*) $F = x$ (sum of ∠s of Δ / *som van ∠e van* Δ) $D = x$ (∠ in the same segment / *∠ in dieselfde segment*) $E\hat{B}C = \hat{D}$	✓ S/R ✓ S/R ✓ S ✓ S/R	
	OR/ OF		
	 Construction: Draw radii OB and OE/ *Konstruksie: Teken radiusse OB en OE*	✓ Construction	
	Let E$\hat{B}$C= x O$\hat{B}$C = 90° [radius⊥tangent / *raaklyn⊥ radius*] ∴ O$\hat{B}$E = $90° - x$ ∴ O$\hat{E}$B = $90° - x$ [∠s opposite equal radii / *∠e teenoor gelyke radiusse*) ∴ B$\hat{O}$E = $2x$ [sum of ∠s of Δ / *som van ∠e van* Δ] ∴ $\hat{D} = x$ [∠ at centre = 2× ∠ at circumference / *middelpuntsꓯ = 2 × omtreksꓯ*] ∴ E$\hat{B}$C = $\hat{D}$	✓ S/R ✓ S/R ✓ S ✓ S/R	(5)

9.3			
9.3.1	$CDO = 90°$ (line from centre to midpt of chord / *lyn van middelpunt van* $\odot$ *tot middelpunt van koord*)	✓ S ✓ R	(2)
9.3.2	$B_1 = 59°$ (tan-chord theorem / *raaklyn koord*)	✓ S ✓ R	(2)
9.3.3	$B\hat{A}G = 90°$ ($\angle$ in semi $\odot$/$\angle$ *in semi* $\odot$) $G_2 = 180° - 90° - 59° = 31°$ ($\angle$sum in Δ / *som van* $\angle$*e van* Δ) **OR** $G_2 = 31°$ (radius$\perp$tangent)	✓ S ✓R ✓ S ✓R ✓✓ S ✓✓R	(4)
9.3.4	$G_3 = 59°$ (alt. $\angle$; $AB\|\|EG$ /*verwisselende* $\angle e$; $AB\|\|EG$)	✓ S ✓ R	(2)
9.3.5	$C_1 = 31°$ ($\angle$ in the same segment /$\angle$ *in dieselfde segment*)	✓ S ✓ R	(2)
9.4	$C_2 = 180° - 31° - 59° = 90°$ (opp. $\angle$ of cyclic quad. / *teenoorstaande* $\angle e$ *van kdvh*) $C\hat{D}O + C_2 = 180°$ AC||OD (co-int $\angle$s supp / *ko − binne hoeke supplementêr*)	✓ S /R ✓ S ✓ R	(3)
			[21]

QUESTION 10 / VRAAG 10



10.1	$W\hat{S}D = 90°$ [tan ⊥ radius OR tan ⊥ diameter / *raaklyn ⊥ radius OF raaklyn ⊥ deursnee / middellyn*] $\hat{W}_1 = 90°$ [co – interior ∠s; PR ∥ BS/ *ko – binne ∠e; PR ∥ BS*] ∴ PW=WR [line from centre ⊥ to chord / *lyn van middelpunt ⊥koord*] **OR** $W\hat{S}D = 90°$ [tan ⊥ radius OR tan ⊥ diameter / *raaklyn ⊥ radius OF raaklyn ⊥ deursnee / middellyn*] $\hat{W}_1 = 90°$ [co – interior ∠s; PR ∥ BS/ *ko – binne ∠e; PR ∥ BS*] $\hat{S}_1 = \hat{P}_3$ [alt ∠s; PRBS/ *verw ∠e; PR ∥ BS*] $\hat{S}_1 = \hat{R}_2$ [tangent, chord / *raaklyn koord*] $\hat{P}_3 = \hat{R}_2$ In ΔPWS and ΔRWS 1. $\hat{P}_3 = \hat{R}_2$ 2. WS is common 3. $\hat{W}_4 = \hat{W}_1$ (angles in straight line / *hoeke op reguit lyn*) ∴ $\Delta PWS \,|||\, \Delta RWS$ (<< s) ∴ PW=WR [$\Delta PWS \,|||\, \Delta RWS$]	✓ S / R ✓ S ✓ R ✓ R ✓ S ✓R ✓ S ✓ S ✓ S	(4)

10.2	In ΔWRS and ΔPAS: 1 $\hat{R}_2 = \hat{A}$ [∠s is same segment / $\angle$ *in dieselfde segment*] 2 $\hat{W}_1 = \hat{P}$ [∠ in semi ⊙ **or** ∠s on a straight line / $\angle$ *in semi* ⊙ ***of*** ∠*e op 'n reguit lyn*] 3 $\hat{S}_3 = \hat{S}_2$ [sum $\angle^s$ Δ / *som van* ∠*e van* Δ] ΔWRS|||ΔPAS [∠; ∠; ∠]	✓ S ✓ R ✓ S ✓ R ✓ sum $\angle^s$ Δ or [∠; ∠; ∠]	(5)
10.3	$\frac{WR}{AP} = \frac{RS}{AS} = \frac{WS}{PS}$ [||| Δ^s] PS. RS = AS. WS $\hat{S}_1 = \hat{P}_3$ [alt $\angle^s$; PR ∥ BS/ *verw* ∠*e*; *PR* ∥ *BS*] $\hat{S}_1 = \hat{R}_2$ [tangent, chord / *raaklyn koord*] $\hat{P}_3 = \hat{R}_2$ PS = RS [sides opp equal ∠s / *sye teenoor gelyke* ∠*e*] RS. RS = AS. WS $RS^2 = AS.WS$ **OR** $\frac{WR}{AP} = \frac{RS}{AS} = \frac{WS}{PS}$ [||| Δ^s] PS. RS = AS. WS $\hat{P}_3 = \hat{R}_2$ [from 10.1] PS = RS [sides opp equal ∠s / *sye teenoor gelyke* ∠*e*] RS. RS = AS. WS $RS^2 = AS.WS$ **OR** In ΔPWS and ΔRWS: 1. $\hat{W}_4 = \hat{W}_1$ (angles in straight line / *hoeke op reguit lyn*) 2. $PW = RW$ 3. WS is common ∴ ΔPWS ≡ ΔRWS [S; ∠; S] ∴ $PS = RS$ $PS^2 = WS.SA$ [perp from right-angled vertex] $RS^2 = WS.SA$	✓ S / R ✓ S ✓ S / R ✓ S / R ✓ S ✓ Subs ✓ S / R ✓ S ✓ S ✓ R ✓ S ✓ Subs ✓ S / R ✓ S ✓ S or R ✓ S ✓ S ✓ R	(6)
			[15]

TOTAL: 150 MARKS