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SENIOR CERTIFICATE EXAMINATIONS/ *SENIORSERTIFIKAAT-EKSAMEN*

MATHEMATICS P2/*WISKUNDE V2*

JUNE 2016

MEMORANDUM

MARKS/*PUNTE*: 150

**This memorandum consists of 21 pages./
*Hierdie memorandum bestaan uit 21 bladsye.***

NOTE:

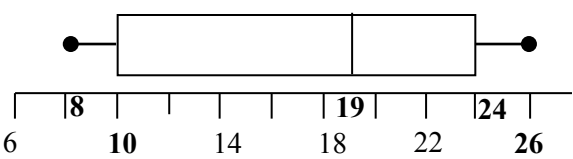
- If a candidate answered a question TWICE, mark only the FIRST attempt.
- If a candidate has crossed out an attempt to answer a question and did not redo it, mark the crossed-out version.
- Consistent accuracy applies in ALL aspects of the marking memorandum. Stop marking at the second calculation error.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

LET WEL:

- Indien 'n kandidaat 'n vraag TWEE keer beantwoord het, sien slegs die EERSTE poging na.
- As 'n kandidaat 'n poging om 'n vraag te beantwoord, doodgetrek en nie oorgedoen het nie, sien die doodgetrekte poging na.
- Volgehoue akkuraatheid is op ALLE aspekte van die memorandum van toepassing. Staak nasien by die tweede berekeningsfout.
- Om antwoorde/waardes om 'n probleem op te los, te veronderstel, word NIE toegelaat NIE.

QUESTION/VRAAG 1

8	8	10	12	16	19	20	21	24	25	26
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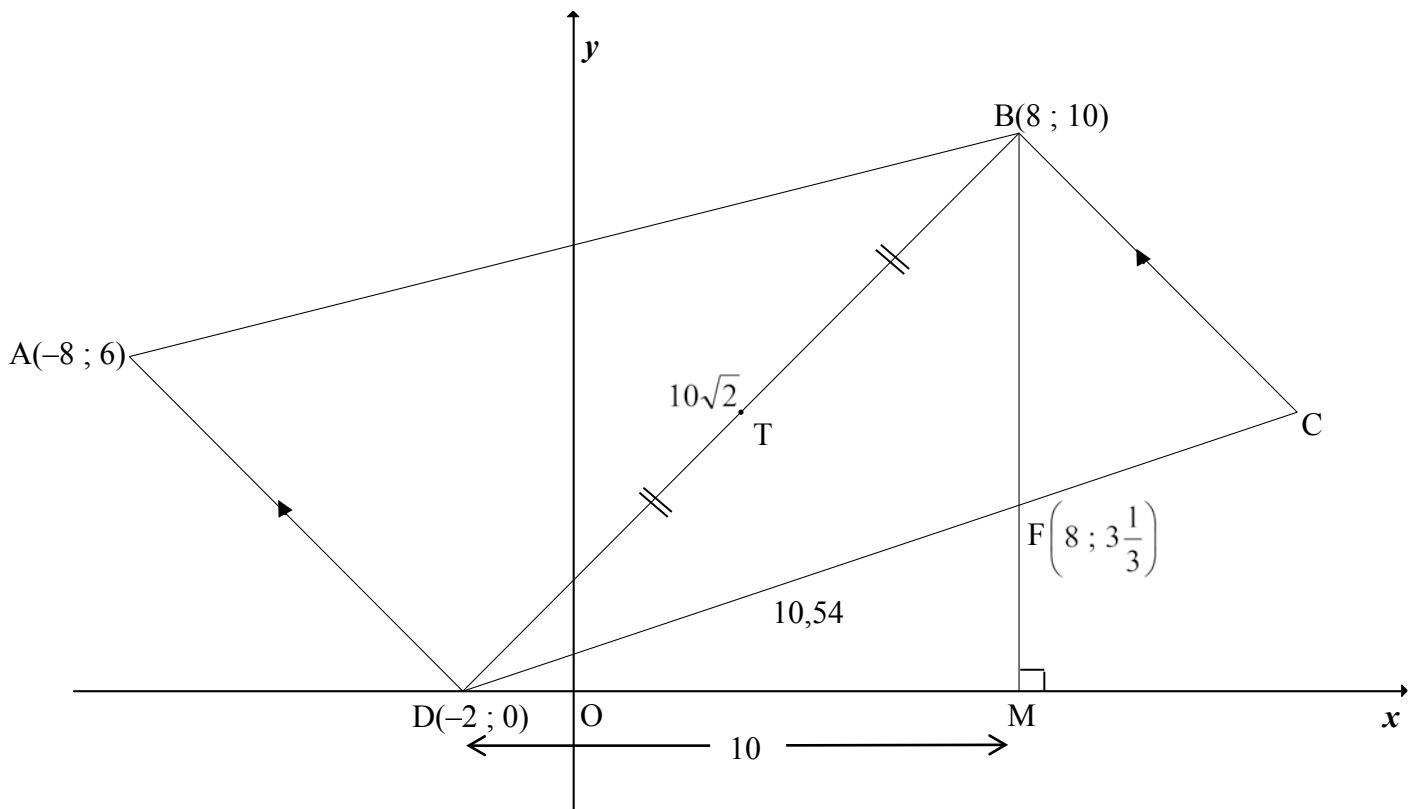
1.1	$\text{Mean/Gemiddelde} = \frac{189}{11}$ $= 17,18$ Answer only: Full marks <i>Slegs antwoord: Volpunte</i>	✓ 189 ✓ answer (2)
1.2	Min = 8, max = 26 Median/Mediaan = 19 $Q_1 = 10$, $Q_3 = 24$ $\therefore (8 ; 10 ; 19 ; 24 ; 26)$	✓ min, max ✓ median ✓ Q_1 & Q_3 (3)
1.3		✓ box/boks/mond ✓ whiskers/snor (2)
1.4	The data is skewed to the left/Die data is skeef na links. OR/OF Negatively skewed/Negatief skeef	✓ answer (1) ✓ answer (1)
1.5	SD/SA = 6,46	✓✓ answer (2)
1.6	$17,18 + 6,46 = 23,64$ $\therefore$ 3 destinations/bestemmings	✓ interval ✓ answer (2) [12]

QUESTION/VRAAG 2

Temperature at midday (in °C) <i>Middaguur-temperatuur (in °C)</i>	18	21	19	26	32	35	36	40	38	30	25
Number of bottles of water (500 ml) <i>Getal bottels water (500 ml)</i>	12	15	13	31	46	51	57	70	63	53	23

2.1	(30 ; 53)	✓ answer (1)
2.2	$a = -38,51$ $b = 2,68$ $\therefore \hat{y} = 2,68x - 38,51$	✓ value a ✓ value b ✓ equation (3)
2.3	$\therefore \hat{y} \approx 36,53$ bottles OR/OF $\hat{y} \approx 2,68(28) - 38,51$ $\approx 36,53$ bottles	✓✓ answer (2) ✓ substitution ✓ answer (2)
2.4	Strong/ <i>Sterk</i> The majority of the points lie close to the regression line./ <i>Die meerderheid punte lê naby die regressielyn.</i> OR/OF Strong/ <i>Sterk</i> $r = 0,98$	✓ strong/ <i>sterk</i> ✓ reason/ <i>rede</i> (2) ✓ strong/ <i>sterk</i> ✓ reason/ <i>rede</i> (2)
2.5	Temperature cannot rise beyond a certain point as this would be life threatening OR there is only so much water one can consume before it becomes a risk to your health (hyponatremia)./ <i>Temperatuur kan nie hoër as 'n sekere punt styg nie, anders raak dit lewensgevaarlik. OF 'n persoon kan net 'n sekere hoeveelheid water inneem, anders raak dit 'n gesondheidsrisiko</i>	✓ reason/ <i>rede</i> (1)
		[9]

QUESTION/VRAAG 3

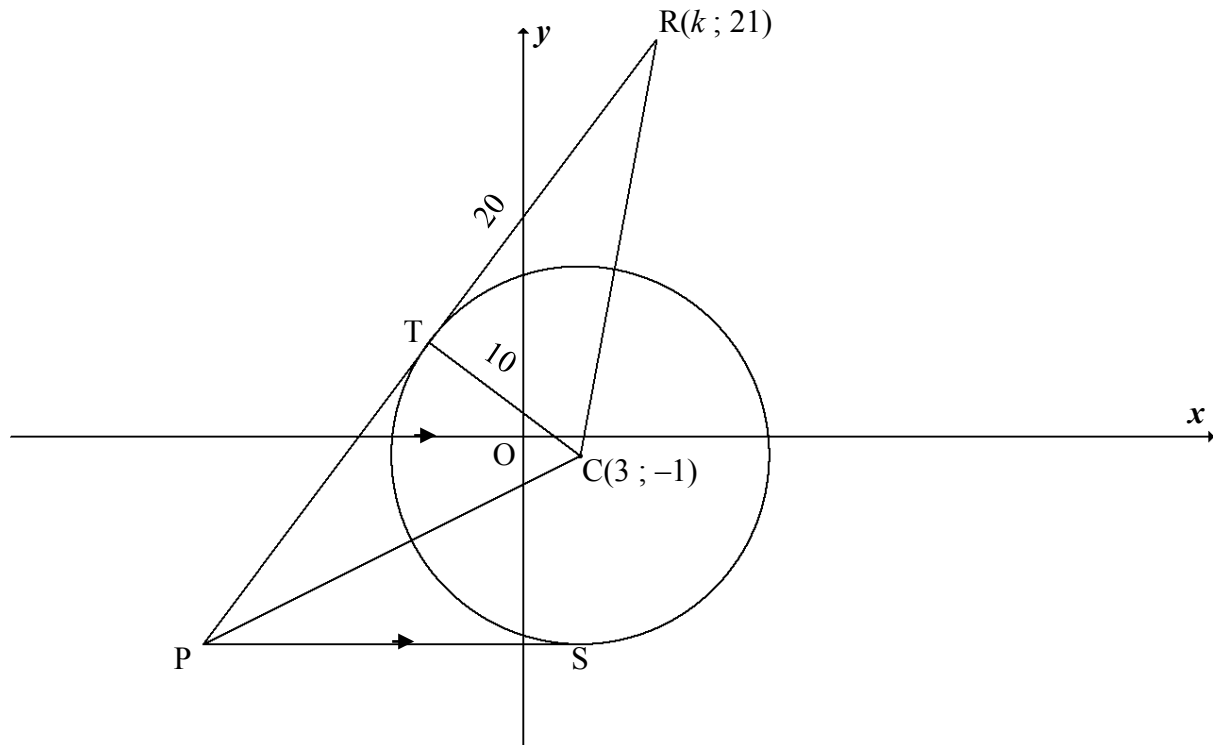


3.1	$m_{AD} = \frac{y_2 - y_1}{x_2 - x_1}$ $= \frac{0 - 6}{-2 - (-8)}$ $= \frac{-6}{6} = -1$	✓ substitution ✓ -1 (2)
3.2	$m_{BC} = -1$ [BC AD] $y = -x + c$ $10 = -8 + c$ $c = 18$ $y = -x + 18$ OR/OF $m_{BC} = -1$ [BC AD] $y - y_1 = m(x - x_1)$ $y - 10 = -(x - 8)$ $y = -x + 18$	✓ gradient ✓ substitute m and (8; 10) ✓ equation (3) ✓ gradient ✓ substitute m and (8; 10) ✓ equation (3)

3.3	$m_{BD} = \frac{y_2 - y_1}{x_2 - x_1}$ $= \frac{10 - 0}{8 + 2} = 1$ $m_{BD} \times m_{AD} = 1 \times -1 = -1$ $\therefore DB \perp AD$ OR $AD^2 = 72 \text{ or } AD = \sqrt{72} \text{ or } 6\sqrt{2}$ $AB^2 = 272 \text{ or } AB = \sqrt{272} \text{ or } 4\sqrt{17}$ $BD^2 = 200 \text{ or } BD = \sqrt{200} \text{ or } 10\sqrt{2}$ $\therefore AB^2 = AD^2 + BD^2$ $\therefore \hat{ADB} = 90^\circ \quad [\text{converse Pyth th/ omgekeerde Pyth st}]$	✓ substitution ✓ answer ✓ $m_{BD} \times m_{AD} = -1$ (3) ✓✓ calculating all 3 sides ✓ $AB^2 = AD^2 + BD^2$ (3)
3.4	$\tan \hat{BDM} = m_{BD} = 1$ $\therefore \hat{BDM} = 45^\circ$ OR $\sin \hat{BDM} = \frac{BM}{BD} = \frac{10}{10\sqrt{2}} = \frac{1}{\sqrt{2}}$ $\therefore \hat{BDM} = 45^\circ$	✓ $\tan \hat{BDM} = m_{BD}$ ✓ answer (2) ✓ $\sin \hat{BDM} = \frac{1}{\sqrt{2}}$ ✓ answer (2)
3.5	$T(x; y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ $= \left(\frac{-2 + 8}{2}, \frac{0 + 10}{2} \right)$ $= (3; 5)$ T symmetrical about BM/T is simmetries om BM $\therefore$ distance of T to BM = 5 units = distance from BM to C $\therefore C(13; 5)$ OR/OF	✓ T(3 ; 5) ✓ value of x ✓ value of y (3)

	$\tan \hat{FDM} = m_{DC} = \frac{5-0}{13+2} = \frac{1}{3} \quad \text{or} \quad \tan \hat{FDM} = \frac{FM}{DM} = \frac{\frac{10}{3}}{10} = \frac{1}{3}$ $\hat{FDM} = 18,43^\circ$ $\therefore \hat{BFD} = 108,43^\circ \quad [\text{ext } \angle \Delta]$ $BF = \frac{20}{3} \text{ or } 6\frac{2}{3}$ $DF^2 = (10)^2 + \left(3\frac{1}{3}\right)^2 \quad [\text{Pyth } \triangle DFM]$ $DF = 10,54 \text{ or } \frac{\sqrt{1000}}{3} \text{ or } \frac{10\sqrt{10}}{3}$ $BD = \sqrt{(10-0)^2 + (8+2)^2}$ $= \sqrt{200} \text{ or } 10\sqrt{2}$ $\therefore \text{area/opp } \triangle BDF = \frac{1}{2} \cdot BF \cdot DF \cdot \sin \hat{BFD}$ $= \frac{1}{2} \left(\frac{20}{3} \right) \left(\frac{10\sqrt{10}}{3} \right) (\sin 108,43)$ $= \frac{100}{3} \text{ or } 33\frac{1}{3} \text{ or } 33,33 \text{ square units/vk eenh}$ OR/OF $BF = \frac{20}{3} \text{ or } 6\frac{2}{3}$ $BD = \sqrt{(10-0)^2 + (8+2)^2}$ $= \sqrt{200} \text{ or } 10\sqrt{2}$ $\text{area/opp } \triangle BDF = \frac{1}{2} \cdot BF \cdot BD \cdot \sin \hat{DBF}$ $= \frac{1}{2} \left(\frac{20}{3} \right) \left(\sqrt{200} \right) (\sin 45^\circ)$ $= \frac{100}{3} \text{ or } 33\frac{1}{3} \text{ or } 33,33 \text{ square units/vk eenh}$ OR/OF $\text{area/opp } \triangle BDF$ $= \text{area/opp } \triangle BCD - \text{area/opp } \triangle BCF$ $= \frac{1}{2} (10\sqrt{2}) (5\sqrt{2}) - \frac{1}{2} \left(\frac{20}{3} \right) (5)$ $= \frac{100}{3} \text{ or } 33\frac{1}{3} \text{ or } 33,33 \text{ square units/vk eenh}$ OR/OF	✓ gradient/ratio ✓ $\hat{BFD}$ ✓ DF ✓ correct substitution into area rule ✓ answer (5) ✓ BF ✓ BD ✓ formula/method ✓ correct substitution into area rule ✓ answer (5) ✓ formula/method ✓ $BD = 10\sqrt{2}$ ✓ $BC = 5\sqrt{2}$ ✓ $BF = \frac{20}{3}$ ✓ answer (5)
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	$\tan \hat{FDM} = m_{DC} = \frac{5-0}{13+2} = \frac{1}{3} \quad \text{or} \quad \tan \hat{FDM} = \frac{FM}{DM} = \frac{\frac{10}{3}}{10} = \frac{1}{3}$ $\hat{FDM} = 18,43^\circ$ $\hat{BDF} = 26,56^\circ$ area / opp $\triangle BDF$ $= \frac{1}{2} \cdot BD \cdot DF \cdot \sin \hat{BDF}$ $= \frac{1}{2} \cdot (10\sqrt{2}) \cdot \left(\frac{10\sqrt{10}}{3} \right) \cdot \sin 26,56^\circ$ $= \frac{100}{3} \text{ or } 33\frac{1}{3} \text{ or } 33,33 \text{ square units/vk eenh}$	✓ gradient/ratio ✓ $\hat{BDF}$ ✓ DF OR/OF BD ✓ correct substitution into area rule ✓ answer (5) [18]
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QUESTION/VRAAG 4

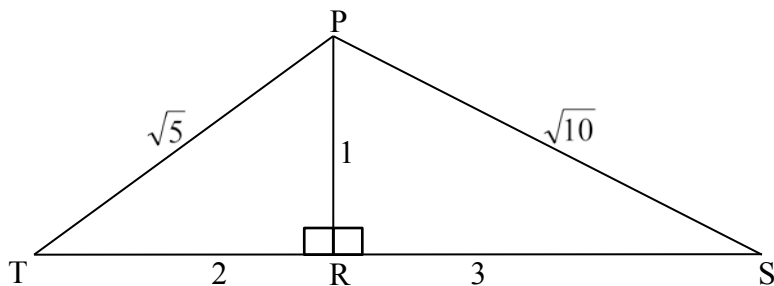
4.1	radius $\perp$ tangent /raaklyn	✓ R (1)
4.2	$CR^2 = TR^2 + CT^2$ (Pyth) $CR^2 = 20^2 + 10^2 = 500$ $CR = \sqrt{500}$ or $10\sqrt{5}$	✓ substitution ✓ answer (2)
4.3	$CR^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$ $500 = (k - 3)^2 + (21 + 1)^2$ $k^2 - 6k + 9 + 484 = 500$ $k^2 - 6k - 7 = 0$ $(k - 7)(k + 1) = 0$ $k = 7$ or $k \neq -1$ OR/OF $CR^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$ $500 = (k - 3)^2 + (21 + 1)^2$ $(k - 3)^2 = 16$ $k - 3 = 4$ or $k - 3 = -4$ $k = 7$ or $k \neq -1$	✓ substitution ✓ standard form ✓ factors ✓ $k = 7$ (4) ✓ substitution ✓ square form ✓ square root ✓ $k = 7$ (4)

4.4	$(x-3)^2 + (y+1)^2 = 100$	✓✓ answer (2)
4.5	CS = 10 and CS $\perp$ PS $\therefore S(3; -11)$ $\therefore y = -11$	✓ S(3; -11) ✓ answer (2)
4.6.1	S(3; -11) $\therefore 3(-11) - 4x = 35$ $x = -17$ $\therefore P(-17; -11)$ OR/OR $\frac{4}{3}x + \frac{35}{3} = -11$ $\frac{4}{3}x = \frac{-68}{3}$ $x = -17$ P(-17; -11)	✓ substituting ✓ answer (2) ✓ equating ✓ answer (2)
4.6.2	PT = PS [tangents from common point/rklyne vanaf dies pt] $= 17 + 3 = 20$ units OR $PC = \sqrt{(-17-3)^2 + (-11+1)^2}$ $= \sqrt{500} \text{ or } 10\sqrt{5}$ $PT^2 = PC^2 - TC^2$ [Pyth th] $= 500 - 100$ $= 400$ $\therefore PT = 20$ OR $PC = \sqrt{(-17-3)^2 + (-11+1)^2}$ $= \sqrt{500} \text{ or } 10\sqrt{5}$ $\Delta PTC \equiv \Delta RTC$ [90°HS] $\therefore PT = TR$ $\therefore PT = 20$	✓ S ✓R ✓ answer (3) ✓ value of PC ✓ using Pyth ✓ answer (3) ✓ value of PC ✓ S/R or proved ✓ answer (3)
4.7.1	M(3; -16)	✓ answer (1)

4.7.2	Radius = 4	✓ answer (1)
4.7.3	$r_1 + r_2 = 10 + 4 = 14$ distance CM = $\sqrt{(3-3)^2 + (-1+16)^2}$ $= \sqrt{225}$ $= 15$ CM > $r_1 + r_2$ Therefore the two circles do not intersect or touch./ <i>Daarom sny of raak die twee sirkels nie.</i>	✓ $r_1 + r_2$ ✓ 15 ✓ explanation (3) [21]

QUESTION/VRAAG 5

5.1



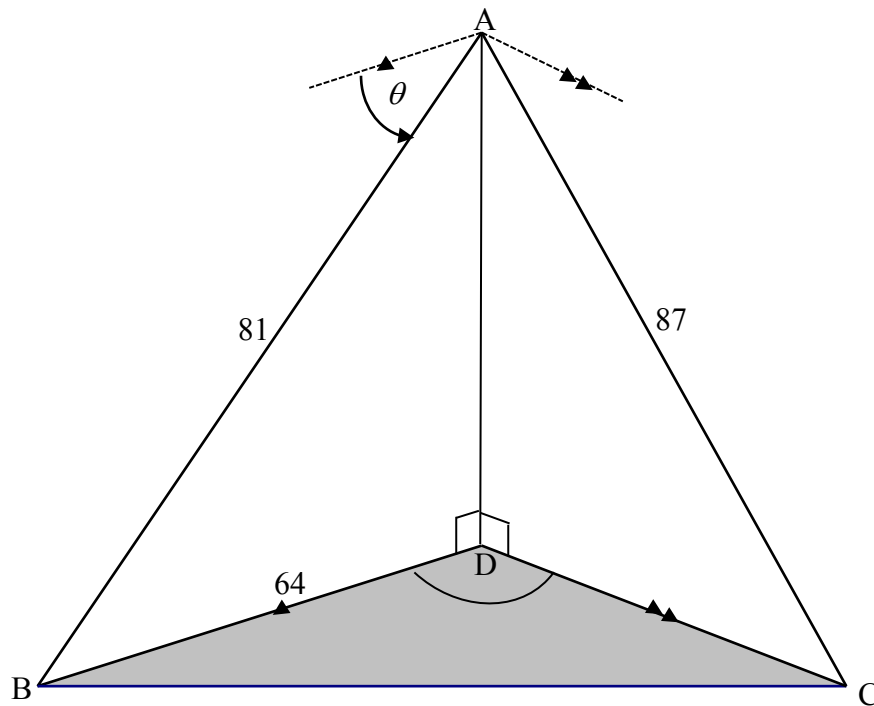
5.1.1(a)	$\sin T = \frac{1}{\sqrt{5}} = \frac{\sqrt{5}}{5} = 0,45$	✓ value (1)
5.1.1(b)	$\cos S = \frac{3}{\sqrt{10}} = \frac{3\sqrt{10}}{10} = 0,95$	✓ value (1)
5.1.2	$\cos(T + S) = \cos T \cos S - \sin T \sin S$ $= \left(\frac{2}{\sqrt{5}}\right)\left(\frac{3}{\sqrt{10}}\right) - \left(\frac{1}{\sqrt{5}}\right)\left(\frac{1}{\sqrt{10}}\right)$ $= \frac{6}{\sqrt{50}} - \frac{1}{\sqrt{50}}$ $= \frac{5}{\sqrt{50}} \text{ or } \frac{1}{\sqrt{2}} \text{ or } \frac{\sqrt{2}}{2}$	✓ expansion ✓ $\frac{2}{\sqrt{5}}$ ✓ $\frac{1}{\sqrt{10}}$ ✓ simplification ✓ answer (5)
5.2	$\frac{1}{\cos(360^\circ - \theta) \sin(90^\circ - \theta)} - \tan^2(180^\circ + \theta)$ $= \frac{1}{(\cos \theta)(\cos \theta)} - \tan^2 \theta$ $= \frac{1}{\cos^2 \theta} - \left(\frac{\sin^2 \theta}{\cos^2 \theta}\right)$ $= \frac{1 - \sin^2 \theta}{\cos^2 \theta}$ $= \frac{\cos^2 \theta}{\cos^2 \theta} \text{ OR } \frac{1 - \sin^2 \theta}{1 - \sin^2 \theta}$ $= 1$	✓ $\cos \theta$ ✓ $\cos \theta$ ✓ $\tan^2 \theta$ ✓ $\frac{\sin^2 \theta}{\cos^2 \theta}$ ✓ identity ✓ answer (6)

5.3	$(\sin x - \cos x)^2 = \left(\frac{3}{4}\right)^2$ $\sin^2 x - 2 \sin x \cos x + \cos^2 x = \frac{9}{16}$ $1 - 2 \sin x \cos x = \frac{9}{16}$ $2 \sin x \cos x = \frac{7}{16}$ $\therefore \sin 2x = \frac{7}{16}$	✓ squaring both sides ✓ expanding LHS ✓ using identity ✓ simplifying ✓ answer (5) [18]
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QUESTION/VRAAG 6

6.1	$4 \sin x + 2 \cos 2x = 2$ $2 \sin x + \cos 2x - 1 = 0$ $2 \sin x + (1 - 2 \sin^2 x) - 1 = 0$ $2 \sin^2 x - 2 \sin x = 0$ $2 \sin x (\sin x - 1) = 0$ $2 \sin x = 0$ or $\sin x - 1 = 0$ $\sin x = 0$ $\sin x = 1$ $x = k.180^\circ$ or $x = 90^\circ + k.360^\circ, k \in \mathbb{Z}$	✓ using identity ✓ standard form ✓ factors ✓ $\sin x = 0$ or $\sin x = 1$ ✓ $k.180^\circ$ ✓ $90^\circ + k.360^\circ, k \in \mathbb{Z}$ (6)
6.2.1		✓ turning point $(-90^\circ; -3)$ ✓ turning point $(90^\circ; 1)$ ✓ $(-180^\circ; -1)$ & $(0^\circ; -1)$ (3)
6.2.2	$(-90^\circ; 0^\circ)$ OR/OF $-90^\circ < x < 0^\circ$	✓ ✓ answer (2) ✓ ✓ answer (2)
6.2.3	$f(x) = g(x)$ $\therefore -180^\circ; 0^\circ; 90^\circ; 180^\circ$ $f(x + 30^\circ) = g(x + 30^\circ)$ $\therefore x = -30^\circ; 60^\circ; 150^\circ$	✓ any ONE correct ✓ other 2 correct (2) [13]

QUESTION/VRAAG 7

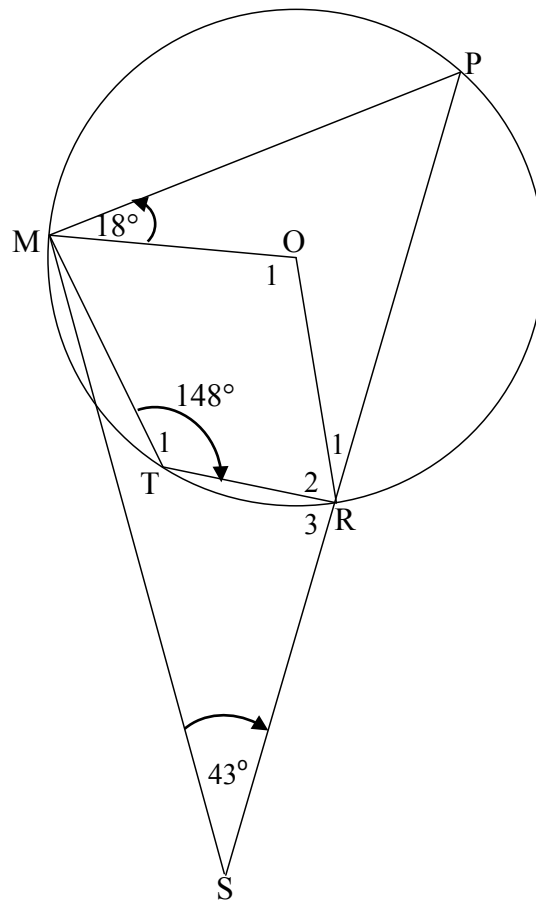


7.1	$\hat{A}BD = \theta$ [alternate $\angle$ s; $\parallel$ lines] $\cos \theta = \frac{BD}{AB} = \frac{64}{81}$ $\theta = 38^\circ$ OR/OF $\sin \hat{B}AD = \frac{64}{81}$ $\hat{B}AD = 52,18^\circ$ $\theta = 38^\circ$	✓ correct trig ratio ✓ substitution into correct ratio ✓ answer (to the nearest degree) (3) ✓ correct trig ratio ✓ substitution into correct ratio ✓ answer (to the nearest degree) (3)
7.2	$BC^2 = AB^2 + AC^2 - 2(AB)(AC)\cos \hat{B}AC$ $= 81^2 + 87^2 - 2(81)(87)\cos 82,6^\circ$ $= 12314,754\dots$ $BC = 110,97 \text{ m}$	✓ use cosine rule ✓ correct substitution into cosine rule ✓ answer (3)

7.3	$\frac{\sin \hat{D}CB}{BD} = \frac{\sin \hat{B}DC}{BC}$ $\sin \hat{D}CB = \frac{BD \cdot \sin \hat{B}DC}{BC}$ $\sin \hat{D}CB = \frac{64 \cdot \sin 110^\circ}{110,97}$ $\therefore \hat{D}CB = 32,82^\circ$	✓ use sine rule ✓ substitution ✓ answer (3) [9]
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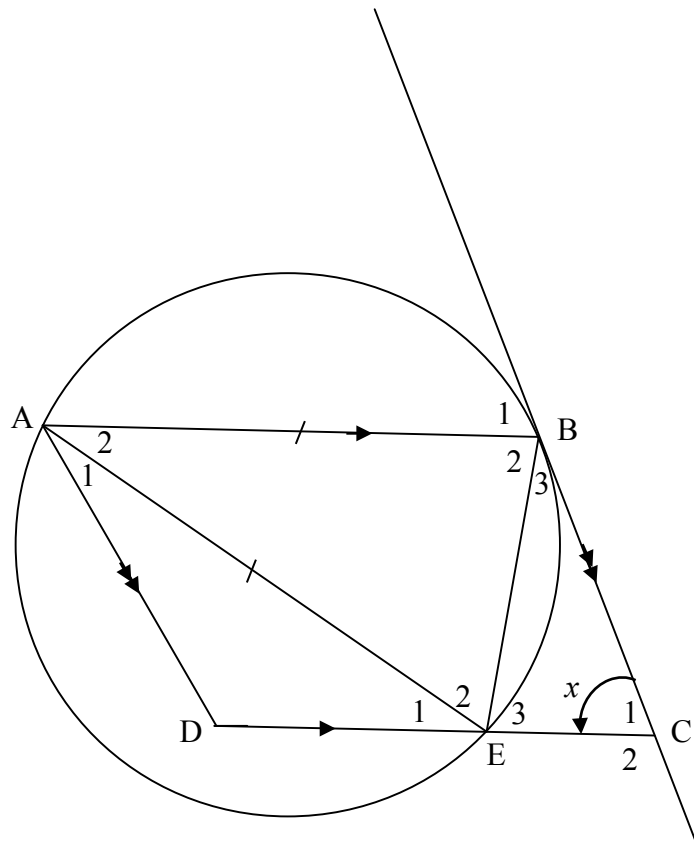
QUESTION/VRAAG 8

8.1



8.1.1	$\hat{P} = 32^\circ$ [opp $\angle$ s of cyclic quad/teenoorst $\angle$ e v koordevh]	✓ S ✓ R (2)
8.1.2	$\hat{O}_1 = 2(32^\circ) = 64^\circ$ [$\angle$ centre = 2 $\angle$ at circum/midpts $\angle$ = 2 omtreks $\angle$] OR/OF reflex $\hat{O} = 296^\circ$ [$\angle$ centre = 2 $\angle$ at circum/midpts $\angle$ = 2 omtreks $\angle$] $\hat{O}_1 = 64^\circ$ [$\angle$ s around a point/ $\angle$ e om 'n punt]	✓ S ✓ R (2) ✓ S and R ✓ S (2)
8.1.3	$\hat{O}\hat{M}\hat{S} = 180^\circ - (32^\circ + 18^\circ + 43^\circ)$ [sum $\angle$ s Δ / som $\angle$ e Δ] $= 87^\circ$	✓ S ✓ S (2)
8.1.4	$\hat{R}_3 = \hat{T}\hat{M}\hat{P}$ [ext $\angle$ cyclic quad/buite $\angle$ koordevh] $= 87^\circ + 18^\circ - 6^\circ$ $= 99^\circ$	✓ R ✓ S (2)

8.2



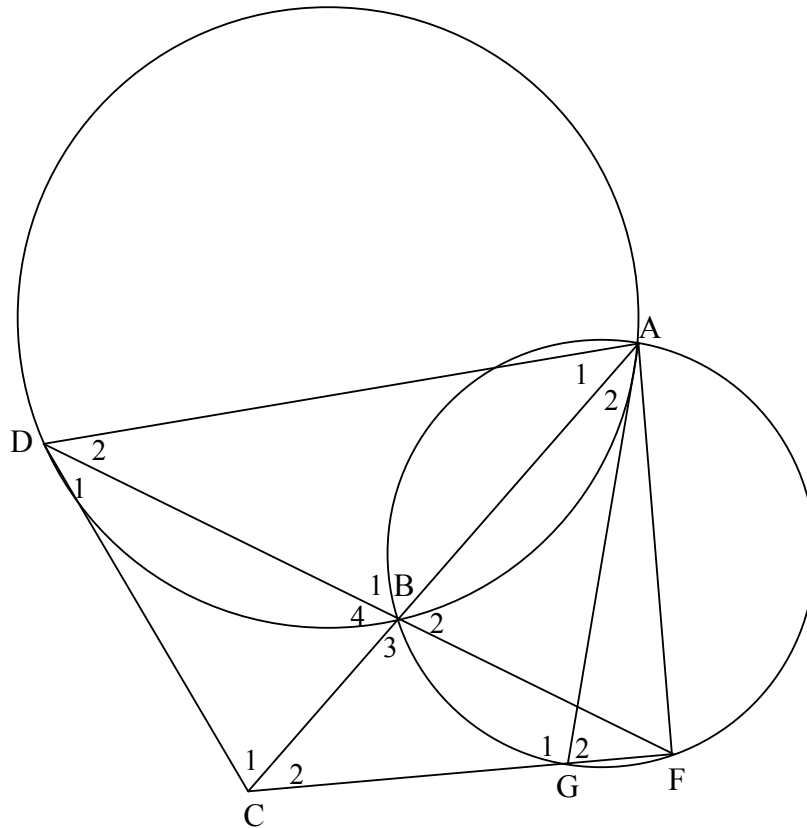
8.2.1	corres $\angle$ s/ooreenk $\angle$ e; AB DC	✓ R (1)
8.2.2	$\hat{E}_2 = x$ [tan - chord theorem/raakl – koordst] $\hat{B}_2 = x$ [$\angle$ s opp = sides/ $\angle$ e teenoor = sye] $\hat{E}_3 = x$ [alt $\angle$ s/verwiss $\angle$ e; AB DC] $\hat{D}\hat{A}\hat{B} = x$ [opp $\angle$ s ^m /teenoor $\angle$ e ^m OR/OF alternate/verwiss $\angle$ s/e; BC AD] Any 3 $\angle$s correct	✓ S ✓ R ✓ S ✓ R ✓ S ✓ R (6)
8.2.3	$\hat{D} = 180^\circ - x$ [co - int $\angle$ s suppl/ko – binne $\angle$ e suppl; AD BC] $\therefore \hat{B}_2 + \hat{D} = 180^\circ$ $\therefore$ ABED a cyc quad/kdvh [converse opp $\angle$ s of cyclic quad/ omgek teenoorst $\angle$ e koordevh] OR/OF $\hat{D}\hat{A}\hat{B} = x$ [opp $\angle$ s/teenoor $\angle$ e ^m] OR/OF [alt $\angle$ s/verwiss $\angle$ e; BC AD] $\hat{E}_3 = \hat{D}\hat{A}\hat{B} = x$ $\therefore$ ABED a cyc quad/kdvh [converse ext $\angle$ of cyc quad/omgek buite $\angle$ v koordevh]	✓ S ✓ R ✓ R (3) ✓ S ✓ R ✓ R (3) [18]

QUESTION/VRAAG 9

9.1	... in the alternate segment/...in die(teen)oorstaande segment	✓ answer
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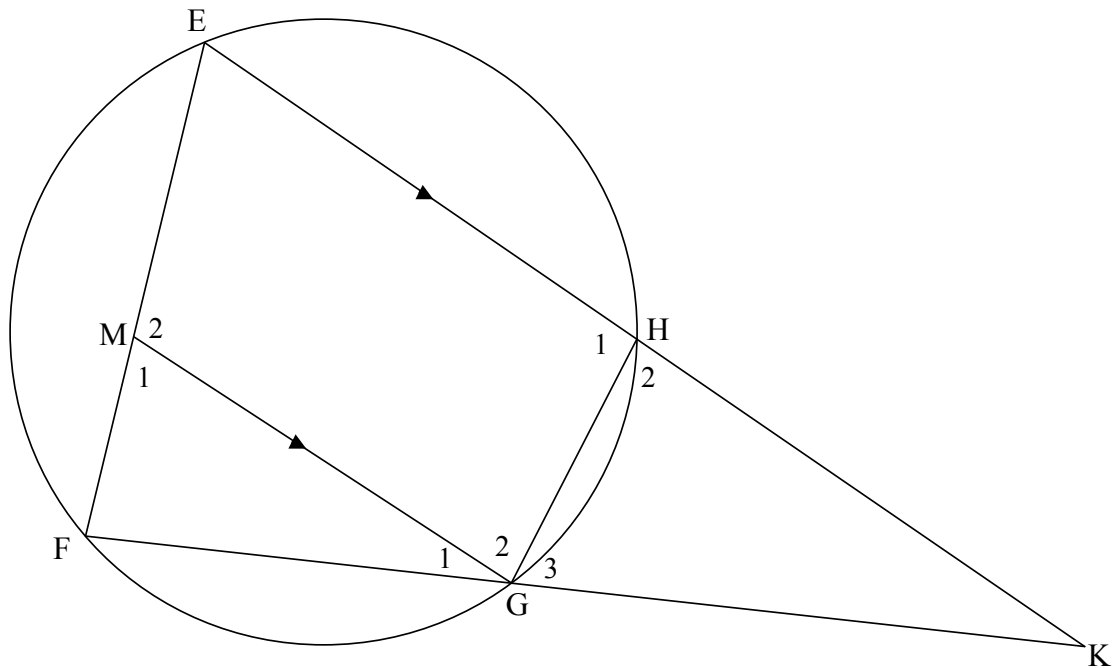
(1)

9.2



9.2.1	$\hat{A}_1 = \hat{D}_1$ [tan chord theorem/raakl – koordst] $\hat{B}_4 = \hat{A}_1 + \hat{D}_2$ [ext $\angle \Delta$ /buite $\angle \Delta$] $= \hat{D}_1 + \hat{D}_2$	$\checkmark$ S $\checkmark$ R $\checkmark$ S $\checkmark$ R (4)
9.2.2	$\hat{B}_4 = \hat{B}_2$ [vert opp $\angle$ s/regoorst $\angle$ e] $\hat{D}_1 + \hat{D}_2 = \hat{B}_2$ [proven/bewys] $= \hat{G}_2$ [$\angle$ s in same segment/ $\angle$ e in dies segment] $\therefore$ AGCD is cyc quad/kvh [converse ext $\angle$ cyc quad/omgek buite $\angle$ kvh]	$\checkmark$ S $\checkmark$ S $\checkmark$ R $\checkmark$ R (4)
9.2.3	$\hat{D}_1 = \hat{A}_2$ [$\angle$ s in same segment/ $\angle$ e in dies segment] $\hat{A}_2 = \hat{F}$ [$\angle$ s in same segment/ $\angle$ e in dies segment] $\therefore \hat{D}_1 = \hat{F}$ $\therefore DC = CF$ [sides opp = $\angle$ s/sye teenoor = $\angle$ e]	$\checkmark$ S $\checkmark$ R $\checkmark$ S $\checkmark$ R (4) [13]

10.2



10.2.1(a)	In $\triangle KGH$ and $\triangle KEF$ $\hat{K}$ is common/<i>gemeen</i> $\hat{H}_2 = \hat{F}$ [ext $\angle$ cyclic quad/<i>buite $\angle$ koordevh</i>] $\hat{G}_3 = \hat{E}$ [sum $\angle$s $\triangle$ OR ext $\angle$ cyclic quad/<i>som $\angle$e $\triangle$ OR buite $\angle$ koordevh</i>] $\therefore \triangle KGH \parallel \triangle KEF$ [$\angle\angle\angle$]	✓ S ✓ S ✓ R ✓ naming third angle OR $\angle\angle\angle$ (4)
10.2.1(b)	$\frac{EF}{GH} = \frac{KE}{KG}$ [$\triangle$s] $\therefore \frac{EF}{GH} = \frac{KE}{EF}$ [$KG = EF$] $\therefore EF^2 = KE \cdot GH$	✓ S ✓ S (2)
10.2.1(c)	$\frac{KG}{KF} = \frac{EM}{EF}$ [prop theorem/<i>eweredighst</i>; $MG \parallel EK$] but $EF = KG$ [given/<i>gegee</i>] $\frac{KG}{KF} = \frac{EM}{KG}$ $KG^2 = EM \cdot KF$	✓ S ✓ R ✓ S (3)
10.2.2	$KE \cdot GH = EM \cdot KF$ $EM = \frac{20 \times 4}{16}$ $= 5 \text{ units}$	✓ $KE \cdot GH = EM \cdot KF$ ✓ substitution ✓ answer (3) [19]

TOTAL/TOTAAL: 150