

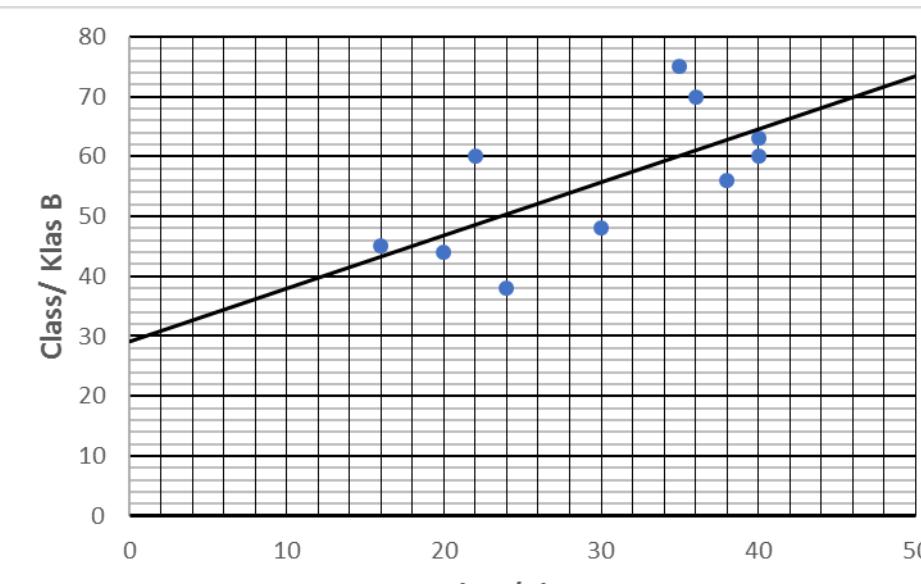
**NOTE:**

- If a candidate answers a question TWICE, mark only the first one.
- Consistent accuracy applies in ALL aspects of the marking memorandum.

**LET WEL:**

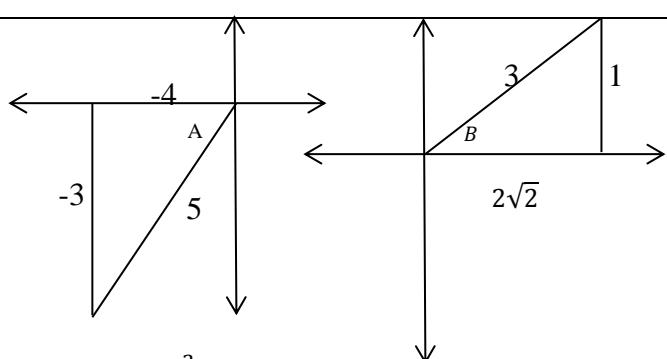
- Indien 'n kandidaat 'n vraag TWEE keer beantwoord, merk slegs die eerste poging.
- Volgehoue akkuraatheid is deurgaans op ALLE aspekte van die memorandum van toepassing.

		SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks																	
<b>QUESTION/ VRAAG 1</b>																					
1.1		<table border="1"> <thead> <tr> <th>Percentage of income (x)</th> <th>Frequency</th> <th>Cumulative Frequency</th> </tr> </thead> <tbody> <tr> <td><math>20 &lt; x \leq 30</math></td><td>10</td><td>10</td></tr> <tr> <td><math>30 &lt; x \leq 40</math></td><td>15</td><td>25</td></tr> <tr> <td><math>40 &lt; x \leq 50</math></td><td>20</td><td>45</td></tr> <tr> <td><math>50 &lt; x \leq 60</math></td><td>10</td><td>55</td></tr> <tr> <td><math>60 &lt; x \leq 70</math></td><td>5</td><td>60</td></tr> </tbody> </table>	Percentage of income (x)	Frequency	Cumulative Frequency	$20 < x \leq 30$	10	10	$30 < x \leq 40$	15	25	$40 < x \leq 50$	20	45	$50 < x \leq 60$	10	55	$60 < x \leq 70$	5	60	✓ frequency column/ <i>Frekwensie kolom</i>  ✓ first 3 points on C. f column/ <i>1ste 3 punte op Kf kolom</i>  ✓ last 2 points on C. f column/ <i>laaste 2 punte op Kf kolom</i>  (3)
Percentage of income (x)	Frequency	Cumulative Frequency																			
$20 < x \leq 30$	10	10																			
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$50 < x \leq 60$	10	55																			
$60 < x \leq 70$	5	60																			
	1.2.1	$60 - 45$ $= 15$ people spent more than 50% on their income on education	✓ 45  ✓ Answer/ Antwoord	(2)																	
	1.2.2	$\text{Median} = \approx 42 - 43$	✓✓ Answer/ Antwoord	(2)																	
	1.3	$40 < x \leq 50$ OR $x \in (40; 50]$	✓ Answer/ Antwoord  Accept/ Aanvaar: from 40 to 50 / van 40 tot 50	(1)																	
				[8]																	

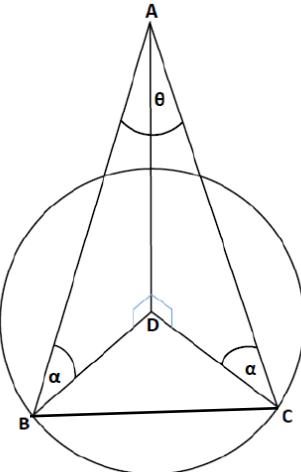
SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD		DESCRIPTORS/BE SKRYWERS	Marks																						
QUESTION/ VRAAG 2																									
2.1 & 2.3	 <p>A scatter plot showing the relationship between Class/Klas A (x-axis) and Class/Klas B (y-axis). The x-axis ranges from 0 to 50 with major grid lines every 10 units. The y-axis ranges from 0 to 80 with major grid lines every 10 units. There are 10 data points plotted, showing a positive linear trend. A regression line is drawn through the points.</p> <table border="1"> <caption>Data points estimated from the scatter plot</caption> <thead> <tr> <th>Class/Klas A</th> <th>Class/Klas B</th> </tr> </thead> <tbody> <tr><td>15</td><td>45</td></tr> <tr><td>18</td><td>44</td></tr> <tr><td>20</td><td>44</td></tr> <tr><td>23</td><td>59</td></tr> <tr><td>25</td><td>38</td></tr> <tr><td>30</td><td>48</td></tr> <tr><td>35</td><td>75</td></tr> <tr><td>36</td><td>70</td></tr> <tr><td>38</td><td>56</td></tr> <tr><td>40</td><td>62</td></tr> </tbody> </table>	Class/Klas A	Class/Klas B	15	45	18	44	20	44	23	59	25	38	30	48	35	75	36	70	38	56	40	62	<ul style="list-style-type: none"> <li>✓ Plotting 5 - 8 points correct/ Afsteek van 5 – 8 punte korrek</li> <li>✓ Plotting 9 -10 points correct/ Afsteek van 9 – 10 punte korrek</li> </ul> <p><b>2.3 Regression line/ Regressielijn:</b></p> <ul style="list-style-type: none"> <li>✓ y -int: <math>\approx 29</math></li> <li>✓ Passing through <math>\approx (30; 56)</math></li> </ul>	(2) (2)
Class/Klas A	Class/Klas B																								
15	45																								
18	44																								
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23	59																								
25	38																								
30	48																								
35	75																								
36	70																								
38	56																								
40	62																								
2.2	$a = 29,22$ (29,21542 ...) $b = 0,89$ $\therefore y = 29,22 + 0,89x$	<ul style="list-style-type: none"> <li>✓ <math>a</math></li> <li>✓ <math>b</math></li> </ul> <p><b>✓ equation / vergelyking</b></p>	(3)																						
2.3	On graph/ <i>Op grafiek</i>																								
2.4	$r = 0,66$ Moderately positive relationship/ <i>redelike (matige) positiewe verwantskap</i>	<ul style="list-style-type: none"> <li>✓ <math>r</math></li> <li>✓ Moderately positive/ <i>Redelike positiewe</i></li> </ul>	(2)																						
2.5	Mean/ <i>Gemiddelde</i> , $\bar{x} = \frac{559}{10} = 55,90$ Standard deviation/ <i>Standaardafwyking</i> : $\sigma = 11,36$	<ul style="list-style-type: none"> <li>✓ <math>\frac{559}{10}</math></li> <li>✓ 55,90</li> <li>✓✓ <math>\sigma = 11,36</math></li> </ul>	(4)																						
2.6	<b>44,54</b> ← → <b>67,26</b> <b>55,90</b> 6 scores lie within one $\sigma$ / 6 Punte val binne een $\sigma$	<ul style="list-style-type: none"> <li>✓ Interval</li> <li>✓ Answer/ <i>Antw</i></li> </ul>	(2)																						
			[15]																						

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION/ VRAAG 3</b>			
3.1	$m_{TQ} = \frac{4 - 0}{0 - 3}$ $= \frac{-4}{3}$	✓ Subst in gradient formula/ <i>Vervang in gradiënt formule</i>  ✓ Answer/Antwoord	(2)
3.2	$RQ = \sqrt{(10 - 3)^2 + (7 - 0)^2}$ $= \sqrt{49 + 49}$ $= \sqrt{98} \text{ Units/ eenhede}$	✓ Substitute/ <i>Vervang</i>  ✓ Answer/Antwoord	(2)
3.3	$m_{TQ} = \frac{4-0}{0-3} = \frac{-4}{3} \quad \text{or/of} \quad m_{TF} = m_{TQ}$ $\therefore y = \frac{-4}{3}x + 4 \quad \therefore \frac{-8-4}{k} = \frac{-4}{3}$ $\therefore -8 = \frac{-4}{3}(k) + 4 \quad -4k = 3(-12)$ $\therefore -12 = \frac{-4}{3}(k) \quad \therefore k = 9$	✓ eqn of/ <i>vgl van TQ or</i> gradients = ✓ Subst/ <i>vervang</i> ( $k; -8$ ) <b>or</b> gradient of TF ✓ Simplify/ <i>Vereenv or cross ×</i> ✓ Answer/Antwoord	(4)
3.4	<b>S(7:11)</b>	✓ $x = 7$ ✓ $y = 11$	(2)
3.5	$\hat{TSR} = \hat{TQR}$ .opp $\angle$ of $\parallel^m$ / ....teenoorst. $\angle$ van $\parallel^m$ $m_{TQ} = \frac{-4}{3} \quad m_{RQ} = 1$ $\tan \alpha = \frac{-4}{3} \quad \tan \beta = 1$ $RA/VH = 53,13^\circ \quad \beta = 45^\circ$ $\alpha = 126,87^\circ$ $\therefore \hat{TSR} = \alpha - \beta$ $\therefore \hat{TSR} = 81,87^\circ$	✓ $\hat{TSR} = \hat{TQR}$ ✓ $\tan \alpha = \frac{-4}{3}$ ✓ $\tan \beta = 1$ ✓ $\alpha = 126,87^\circ$ ✓ $\beta = 45^\circ$ ✓ Answer/Antwoord	(6)
3.6	$MQ = \sqrt{(2)^2 + (2)^2}$ $= \sqrt{8}$ But/Maar $RQ = \sqrt{98}$ ... calc. in q 3.2 $\therefore \text{Ratio} = \frac{\sqrt{8}}{\sqrt{98}}$ $= \frac{2}{7}$	✓ $\sqrt{8}$ ✓ $\frac{\sqrt{8}}{\sqrt{98}}$ ✓ Answer/ Antwoord	(3)
			[19]

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION /VRAAG 4</b>			
4.1	Radius to midpoint of chord/ <i>radius na midpt van koord</i>	✓ Answer/ <i>Antwoord</i>	(1)
4.2	$m_{TS} = -\frac{3}{3} \Rightarrow -1$ $\therefore m_{PN} = m_{TS} \times -1 \quad \dots \dots \text{TS} \perp \text{NP}$ $\therefore m_{PN} = 1$ $y - y_1 = m(x - x_1) \quad \text{OR/ OF} \quad y = mx + c$ $\therefore y - 8 = x + 3 \quad \quad \quad 8 = -3 + c$ $ \quad \quad \quad c = 5$ $\therefore y = x + 11$	✓ $m_{TS}$ ✓✓ $m_{PN}$ ✓ Subst (-3; 8) ✓ Equation/ <i>Vergelyking</i>	(5)
4.3	Substitute $P(0; y) \quad y = 0 + 11$ $\therefore y = 11$ Radius: $11 - 5 = 6$ $\therefore y = -1$	✓ Substitute $P(0; y)$ ✓ Answer/ <i>Antwoord</i> ✓ Radius ✓ Answer/ <i>Antwoord</i>	(4)
4.4	Substitute $M(x; 0)/ Stel M(x; 0)$ $0 = x + 4 \Rightarrow x = -11$ $M = (-11; 0)$  $TO = 5, MO = 11$ $TM^2 = 5^2 + 11^2 \dots \text{pyth}$ $\therefore MT = \sqrt{146}$	✓ Subst $(x; 0) / \text{vervang } (x; 0)$ ✓ Length of TO/ <i>Lengte van TO</i> ✓ Length of MO/ <i>Lengte van MO</i> ✓ Answer/ <i>Antwoord</i>	(4)
4.5	$(x - a)^2 + (y - b)^2 = r^2$ TM is the diameter/ <i>is die middellyn</i> ⊙ TSM  $r = \frac{\sqrt{146}}{2} \Rightarrow r^2 = \frac{146}{4}$  Centre of / <i>midpt</i> ⊙ TSM :  Midp. of TM $= (\frac{x+x_1}{2}; \frac{y+y_1}{2})$ $= (\frac{-11+0}{2}; \frac{0+5}{2})$ $= (\frac{-11}{2}; \frac{5}{2})$  $\therefore (x + \frac{11}{2})^2 + (y - \frac{5}{2})^2 = \frac{146}{4}$ or $\frac{73}{2}$ or 36,5	✓ TM is the diameter of/ <i>is die middellyn van</i> ⊙ TSM  ✓ $r = \frac{\sqrt{146}}{2}$  ✓ centre $(\frac{-11}{2}; \frac{5}{2})$  ✓ $(x + \frac{11}{2})^2 + (y - \frac{5}{2})^2$ ✓ $\frac{146}{4}$ or $\frac{73}{2}$ or 36,5	(5)
			[19]

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION /VRAAG 5</b>			
5.1	 $5\left(\frac{-3}{5}\right) - 6\left(\frac{2\sqrt{2}}{3}\right)^2$ $= -3 - 6\left(\frac{8}{9}\right)$ $= -\frac{25}{3}$	✓ figure 1 in correct quadrant; $r = 5$ / figuur 1 in korrekte kwadrant; $r = 5$ ✓ figure 2 in correct quadrant; $x = 2\sqrt{2}$ / figuur 2 in korrekte kwadrant; $x = 2\sqrt{2}$ ✓✓ substitution / substitusie ✓ Answer/ Antwoord	
5.2.1	$\cos(360^\circ - 24^\circ)$ $= \cos 24^\circ = p$	✓ $\cos 24^\circ$ ✓ Answer/ Antwoord	(2)
5.2.2	$\cos 2(24^\circ)$ $= 2\cos^2 24^\circ - 1$ $= 2p^2 - 1$	✓ $\cos 2(24^\circ)$ ✓ $2\cos^2 24^\circ - 1$ ✓ Answer/ Antwoord	(3)
5.3	$LHS = \tan A$ $RHS = \frac{1-\cos 2A}{\sin 2A}$ $= \frac{1-(1-2\sin^2 A)}{2\sin A \cos A}$ $= \frac{2\sin^2 A}{2\sin A \cos A}$ $= \frac{\sin A}{\cos A}$ $= \tan A$	✓ $1 - 2\sin^2 A$ ✓ $2\sin A \cos A$ ✓ simplify / vereenvoudig ✓ Answer/ Antwoord	(4)
5.4	$\sin 20^\circ \cdot (\cos 40^\circ) + \cos 20^\circ \cdot \sin 40^\circ$ $= \sin(20^\circ + 40^\circ)$ $= \sin 60^\circ$ $= \frac{\sqrt{3}}{2}$	✓ $\cos 40^\circ$ ✓ $\cos 20^\circ$ ✓ $\sin 40^\circ$ ✓ $\sin 60^\circ$ ✓ $\frac{\sqrt{3}}{2}$	(5)
5.5	$2\cos^2 \theta + 5\sin \theta + 1 = 0$ $\therefore 2(1 - \sin^2 \theta) + 5\sin \theta + 1 = 0$ $\therefore 2 - 2\sin^2 \theta + 5\sin \theta + 1 = 0$ $\therefore -2\sin^2 \theta + 5\sin \theta + 3 = 0$ $\therefore 2\sin^2 \theta - 5\sin^2 \theta - 3 = 0$ $\therefore (2\sin \theta + 1)(\sin \theta - 3) = 0$ $\therefore \sin \theta = -\frac{1}{2}; \sin \theta \neq 3$ $\theta = 180^\circ + 30^\circ + 360^\circ n \text{ or } \theta = 360^\circ - 30^\circ + 360^\circ n,$ $\therefore \theta = 210^\circ + 360^\circ n \text{ or } \theta = 330^\circ + 360^\circ n, n \in \mathbb{Z}$	✓ $(1 - \sin^2 \theta)$ ✓ standard form/ Standaardvorm ✓ factors faktore ✓ $\sin \theta = -\frac{1}{2}$ ✓ $\sin \theta \neq 3$ ✓ $210^\circ$ and/ en $330^\circ$ ✓ $360^\circ n, n \in \mathbb{Z}$	(7)
			[26]

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION /VRAAG 6</b>			
6.1	$a = 2$	✓ Answer/ Antwoord	(1)
6.2	<p>A graph showing two trigonometric functions, <math>f</math> and <math>g</math>, plotted against <math>x</math> from <math>-180^\circ</math> to <math>90^\circ</math>. The vertical axis ranges from -2 to 3. Function <math>f</math> (blue) starts at <math>(-180^\circ, 0)</math>, reaches a minimum of <math>y = -1</math> at <math>x = 0^\circ</math>, and returns to <math>(90^\circ, 0)</math>. Function <math>g</math> (red) starts at <math>(-180^\circ, -2)</math>, reaches a maximum of <math>y = 2</math> at <math>x = 0^\circ</math>, and returns to <math>(90^\circ, 0)</math>.</p>	✓ Max TPs /Maks DPe ✓ Min TP/Min DP ✓ x-intercepts / $x$ -afsnitte	
6.3	$180^\circ$	✓ $180^\circ$	(1)
6.4	$x = -90^\circ$ or $x = 90^\circ$	✓ $x = -90^\circ$ ✓ $x = 90^\circ$	(2)
6.5	$\begin{aligned} & 3 - 5.2 \sin x \cos x \\ &= 3 - 5 \sin 2x \\ &= 3 - 5 (-1) \\ &= 8 \end{aligned}$	✓ $-5.2 \sin x \cos x$ ✓ $\sin 2x$ ✓ Answer/ Antwoord	(3)
			[10]

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION /VRAAG 7</b>			
7.1	 $\cos \alpha = \frac{r}{AB}$ $AB = \frac{r}{\cos \alpha}$	✓ expression AB / uitdrukking AB (1)	
7.2	$\cos \alpha = \frac{r}{AC}$ $AC = \frac{r}{\cos \alpha}$ $BC^2 = AB^2 + AC^2 - 2AB \cdot AC \cos B\hat{A}C$ $BC^2 = \left(\frac{r}{\cos \alpha}\right)^2 + \left(\frac{r}{\cos \alpha}\right)^2 - 2\left(\frac{r}{\cos \alpha}\right)\left(\frac{r}{\cos \alpha}\right) \cos \theta$ $BC^2 = \frac{2r^2}{\cos^2 \alpha} - \frac{2r^2 \cos \theta}{\cos^2 \alpha}$ $BC^2 = \frac{2r^2}{\cos^2 \alpha} (1 - \cos \theta)$ $BC = \frac{r \sqrt{2(1 - \cos \theta)}}{\cos \alpha}$ <p style="text-align: center;"><b>OR</b></p> $\cos \alpha = \frac{r}{AC}$ $AC = \frac{r}{\cos \alpha}$ $\therefore AB = AC$ $BC^2 = 2AB^2 - 2AB^2 \cos \theta$ $BC^2 = AB^2(2 - 2\cos \theta)$ $BC = AB\sqrt{2 - 2\cos \theta}$ $BC = \frac{r}{\cos \alpha} \sqrt{2(1 - \cos \theta)}$	✓ expression AC / uitdrukking AC ✓ cosine rule / cos reël ✓ substitution / substitusie ✓ common factor / gemeenskaplike faktor ✓ expression AC / uitdrukking AC ✓ cosine rule / cos reël ✓ substitution AB = AC / vervanging AB = AC ✓ common factor / gemeenskaplike faktor (4)	

<p>7.3</p> $100 = \frac{50(\sqrt{2}(1 - \cos 30^\circ))}{\cos \alpha}$ $\cos \alpha = \frac{50(\sqrt{2}(1 - \cos 30^\circ))}{100}$ $\alpha = 75^\circ$	<p>✓ substituting values of BC, r and <math>\theta</math> / <i>substitusie van waardes vir BC, r and <math>\theta</math></i></p> <p>✓ <math>\cos \alpha = \frac{50(\sqrt{2}(1 - \cos 30^\circ))}{100}</math></p> <p>✓ <math>\alpha = 75^\circ</math></p>	<p>(3)</p>
<p>[8]</p>		

## GEOMETRY/ MEETKUNDE

**S:** Statement/ *Bewering*

**R:** Reason/ *Rede*

**S/R:** Both Statement and Reason/ *Beide Bewering en Rede*

Allow for alternative methods/ *Kyk vir Alternatiewe metodes*

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
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## QUESTION /VRAAG 8

<p>8.1.1</p> <p><math>90^\circ</math></p>	<p>✓ S</p>	<p>(1)</p>
<p>8.1.2</p> <p>Supplementary/ <i>supplementêr</i></p>	<p>✓ S</p>	<p>(1)</p>
<p>8.2.1</p> <p><math>\hat{E}_1 = 54^\circ</math> ... tan-chord thm/ <i>raaklyn-koordstelling</i></p>	<p>✓ S ✓ R</p>	<p>(2)</p>
<p>8.2.2</p> <p><math>\hat{C}_1 = 36^\circ</math> ... angle in semi-circle/ <i>hoek in halfsirkel</i> OR angle subt. By diameter/ <i>hoek onderspan deur midlyn</i></p>	<p>✓ S ✓ R</p>	<p>(2)</p>
<p>8.2.3</p> <p><math>\hat{C}_3 = 35^\circ</math> ... alt. <math>\angle</math>s; AB//CD / <i>verw.</i> <math>\angle e</math>; AB//CD</p>	<p>✓ S ✓ R</p>	<p>(2)</p>
<p>8.2.4</p> <p><math>A\hat{E}D = 55^\circ</math> ... opp <math>\angle</math>s of cyclic quad/ <i>teenoorst <math>\angle e</math> van kvh</i></p>	<p>✓ S ✓ R</p>	<p>(2)</p>
<p>8.2.5</p> <p><math>\hat{E}_4 = 35^\circ</math> ... subt by AC/ <i>ondersp deur AC</i></p> <p><math>\therefore \hat{E}_3 = 20^\circ</math></p>	<p>✓ S ✓ R</p> <p>✓ S</p>	<p>(3)</p>
<p>8.3</p> <p><math>B\hat{A}C = 90^\circ</math> ... tangent- radius/ <i>raaklyn- radius</i> And/ <i>en</i></p> <p><math>B\hat{E}C = 90^\circ</math> ... tangent- radius/ <i>raaklyn- radius</i></p> <p><math>\therefore BECA</math> is a cyclic quad/ <i>is 'n kvh</i> ... opp. <math>\angle</math>s suppl./ <i>teenoorst <math>\angle e</math> suppl.</i></p> <p><math>\therefore D\hat{B}E = A\hat{C}E</math>... external <math>\angle</math> of cyclic quad/ <i>Buite <math>\angle</math> van kvh</i></p>	<p>✓ S ✓ R</p> <p>✓ S</p> <p>✓ R</p> <p>✓ R can only get this mark if BECA is proved a cyclic quad.</p>	<p>(5)</p>
		<p>[18]</p>

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION /VRAAG 9</b>			
9.1			
	<p>Constr./ Konstr: Draw ST with S on AB and T on AC such that AS = DE and AT = DF/ Trek ST met S op AB en T op AC sodat AS = DE en AT = DF</p> $\Delta AST \equiv \Delta DEF \dots S, \angle, S$ $\therefore \hat{S}_1 = \hat{E} \dots \text{from/ vanaf congruency/ kongruensie}$ $= \hat{B} \dots \text{given/ gegee}$ $\therefore ST \parallel BC \dots \text{corresp. } \angle s = \text{ooreenk. } \angle e =$ $\therefore \frac{AB}{AS} = \frac{AC}{AT}$ $\therefore \frac{AB}{DE} = \frac{AC}{DF} \text{ (Constr/ Konstr: AS = DE and/ en AT = DF)}$	<p>✓ Constr./ Konstr – can be on diagram/ kan op diagram wees  ✓ S/R ; Congruency/ Kongruensie</p> <p>✓ <math>\hat{S}_1 = \hat{E}</math>  <math>= \hat{B}</math></p> <p>✓ S: <math>ST \parallel BC</math> ✓ R</p> <p>✓ S: <math>\frac{AB}{AS} = \frac{AC}{AT}</math></p> <p>✓ R (7)</p>	
9.2.1	$\hat{Q}_1 = \hat{Q}_2 \dots \text{given/ gegee}$ $= \hat{N}_2 \dots \text{alt. } \angle s; MN \parallel QR / \text{verw. } \angle e; MN \parallel QR$ $\therefore MN = MQ \dots \text{sides opp} = \angle s / \text{sye teenoor} = \angle e$ $\therefore \Delta QMN \text{ is isosceles/ gelykbenig}$	<p>✓ S: <math>\hat{Q}_1 = \hat{Q}_2</math>  <math>= \hat{N}_2</math></p> <p>✓ R</p> <p>✓ R (3)</p>	
9.2.2	<p>In <math>\Delta PMN</math> and/ en <math>\Delta PQR</math>:</p> <ol style="list-style-type: none"> <li>P is common/ P is gemeen</li> <li><math>\hat{N}_1 = \hat{R} \dots \text{corr./ ooreenk } \angle s; MN \parallel QR</math></li> </ol> $\Delta PMN \parallel\!/\!\! \Delta PQR \dots (\angle, \angle, \angle) \text{ or } 3^{\text{rd}} \angle \text{ given}$	<p>✓ S</p> <p>✓ S ✓ R</p> <p>✓ R (<math>\angle, \angle, \angle</math>) or <math>3^{\text{rd}} \angle</math> given (4)</p>	

9.2.3	<p>From/ vanaf /// in 9.2.2:</p> $\frac{PM}{PQ} = \frac{MN}{QR} = \frac{PN}{PR}$ $\therefore \frac{PM}{5} = \frac{MN}{7,5}$ $\therefore \frac{PM}{MN} = \frac{5}{7,5} = \frac{2}{3}$ $\therefore \frac{PM}{MQ} = \frac{2}{3} \dots MQ = MN \text{ from/ vanaf 9.2.1}$ $\therefore \frac{PN}{NR} = \frac{2}{3} \dots \text{Prop thm/ ewer.stelling; } MN \parallel QR \text{ or/ of line parallel to 1 side of } \Delta / \text{lyn parallel aan 1 sy van } \Delta$	<ul style="list-style-type: none"> <li>✓ Proportionality/ Eweredigheid</li> <li>✓ Subst/verv <math>PQ = 5</math> and/ en <math>QR = 7,5</math></li> <li>✓ <math>\frac{PM}{MN} = \frac{2}{3}</math></li> <li>✓ <math>\frac{PM}{MQ} = \frac{2}{3}</math></li> <li>✓ <math>\frac{PN}{NR} = \frac{2}{3}</math></li> </ul>	(5)
			[19]

	SUGGESTED ANSWER/ VOORGESTELDE ANTWOORD	DESCRIPTORS/BESKRYWERS	Marks
<b>QUESTION/VRAAG 10</b>			
10.1	$B\hat{M}T = 90^\circ = B\hat{N}P$ $\therefore BMPN \text{ is a cyclic quad/ is 'n kvh ... ext } \angle = \text{int opp } \angle / \text{buite } \angle = \text{teenoorst binne } \angle$	<ul style="list-style-type: none"> <li>✓ S</li> <li>✓ R</li> </ul>	(2)
10.2	$\widehat{N}_1 = \widehat{P}_1 \dots \text{subtended by/ onderspan deur } BM$ But/ Maar $\widehat{P}_1 = \widehat{A} \dots \text{tan-chord thm/ raakl-koordstelling}$ $\therefore NM \parallel AP \dots \text{corresp/ ooreenk. } \angle s =$ $\therefore \frac{TN}{AN} = \frac{TM}{MP}$	<ul style="list-style-type: none"> <li>✓ S ✓ R</li> <li>✓ S ✓ R</li> <li>✓ S ✓ R</li> </ul>	(6)
			[16]

Total/Totaal: [150]