



Province of the  
**EASTERN CAPE**  
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo  
Provinsie van die Oos Kaap: Department van Onderwys  
Porafensie Ya Kapa Botjhabela: Letapha la Thuto

**NATIONAL  
SENIORCERTIFICATE/  
NASIONALE  
SENIORSERTIFIKAAT**

**GRADE/GRAAD 11**

**NOVEMBER 2024**

**TECHNICAL MATHEMATICS P2/TEGNIESE WISKUNDE V2  
MARKING GUIDELINE/NASIENRIGLYN**

**MARKS/PUNTE: 150**

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This marking guideline consists of 18 pages./  
Hierdie nasienriglyn bestaan uit 18 bladsye.

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**NOTE:**

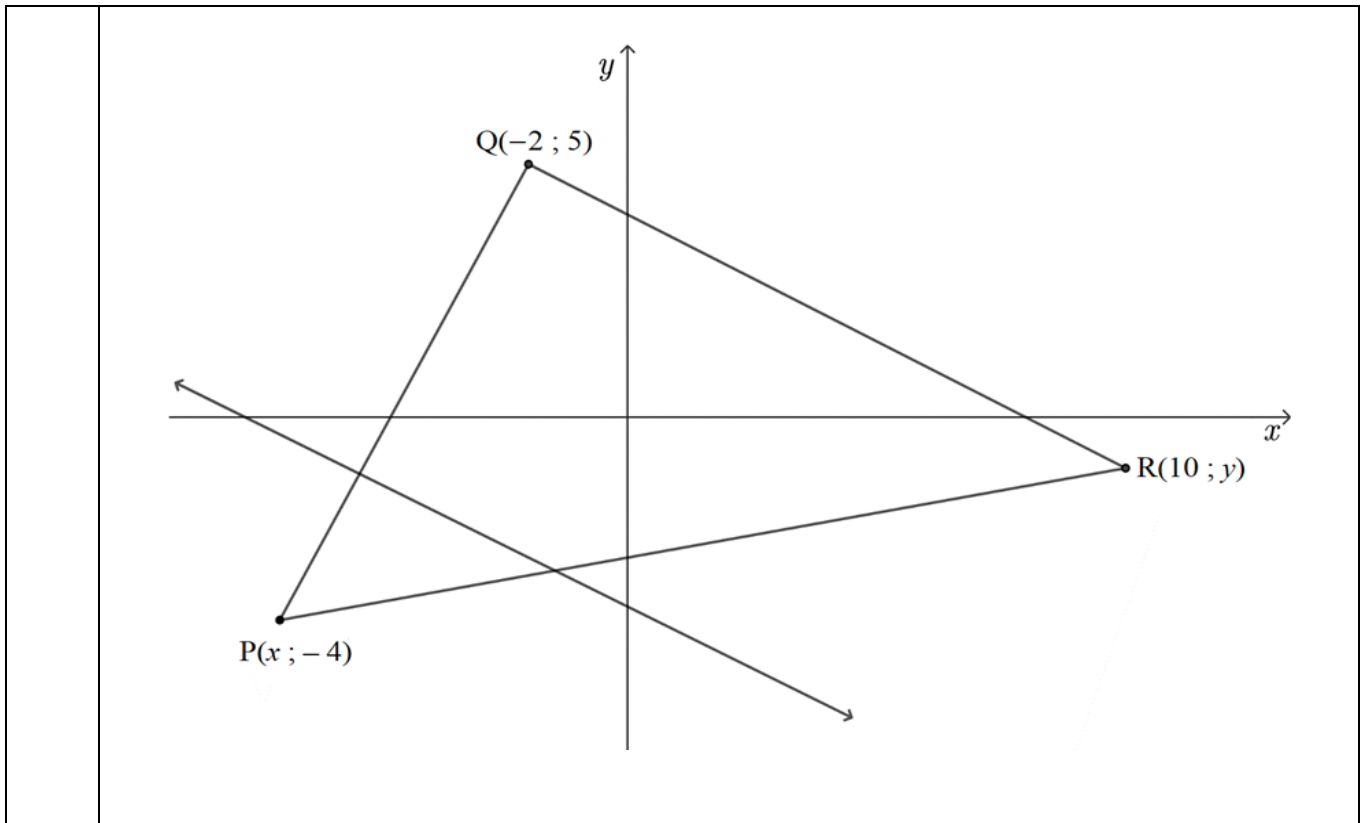
- Continuous accuracy (CA) applies only where indicated in this marking guideline.
- Assuming values/answers in order to solve a problem is unacceptable.

**LET WEL:**

- *Volgehoue akkuraatheid (CA) is slegs van toepassing soos aangedui in hierdie nasienriglyn.*
- *Aanvaarding van waardes/antwoorde om 'n probleem op te los, is onaanvaarbaar.*

<b>MARKING CODES / NASIENKODES</b>	
<b>M</b>	<b>Method / Metode</b>
<b>A</b>	<b>Accuracy / Akkuraatheid</b>
<b>AO</b>	<b>Answer only / Slegs antwoord</b>
<b>CA</b>	<b>Consistent accuracy / Deurlopende akkuraatheid</b>
<b>F</b>	<b>Formula / Formule</b>
<b>I</b>	<b>Identity / Identiteit</b>
<b>R</b>	<b>Rounding / Afronding</b>
<b>S</b>	<b>Simplification / Vereenvoudiging</b>
<b>ST</b>	<b>Statement / Bewering</b>
<b>RE</b>	<b>Reason / Rede</b>
<b>ST RE</b>	<b>Statement and correct reason / Bewering en korrekte rede</b>
<b>SF</b>	<b>Substitution correctly in correct formula / Korrekte vervanging in die korrekte formule</b>
<b>NPU</b>	<b>No penalty for omitting units / Geen penalisering vir eenhede weggelaat</b>

QUESTION/VRAAG 1



<p>1.1</p>	$2y + x + 5 = 0$ $2y = -x - 5$ $y = -\frac{1}{2}x - \frac{5}{2}$ $m_{QR} = -\frac{1}{2}$	<p>✓ S                      <b>A</b></p> <p>✓ Ans / Ant            <b>CA</b></p>	<p>(2)</p>
<p>1.2</p>	$m = \frac{y_2 - y_1}{x_2 - x_1}$ $\frac{y - 5}{10 - (-2)} = -\frac{1}{2}$ $2y - 10 = -12$ $2y = -12 + 10$ $y = -1$ $\therefore R(10; -1)$	<p>✓ M                      <b>A</b></p> <p>✓ S                      <b>A</b></p> <p>✓ Ans / Ant            <b>CA</b></p>	<p>(3)</p>
<p>1.3</p>	$M\left(\frac{x_1 + x_2}{2}; \frac{y_1 + y_2}{2}\right)$ $= M\left(\frac{-2 + 10}{2}; \frac{5 + (-1)}{2}\right)$ $= M(4; 2)$	<p>✓ x-value / x-waarde                      <b>A</b></p> <p>✓ y-value / y-waarde                      <b>A</b></p>	<p>(2)</p>

1.4	$m_{\perp} \times m_{QR} = -1$ $m_{\perp} \times -\frac{1}{2} = -1$ $m_{\perp} = 2$ $y - y_1 = m(x - x_1)$ $y - 2 = 2(x - 4)$ $y = 2x - 8 + 2$ $y = 2x - 6$	✓ F                    A  ✓ $m_{\perp} = 2$ A  ✓ SF                    CA  ✓ S                      CA ✓ Ans / Ant            CA	(5)
1.5.1	Isosceles triangle / <i>Gelykbenige driehoek</i>	✓ Ans / Ant            A	(1)
1.5.2	$QP = QR$ $\therefore QP^2 = QR^2$ $QP^2 = (x + 2)^2 + (-4 - 5)^2$ $QP^2 = x^2 + 4x + 85$  $QR^2 = (10 + 2)^2 + (-1 - 5)^2$ $QR^2 = 180$  $x^2 + 4x + 85 = 180$ $x^2 + 4x - 95 = 0$  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ $x = \frac{-4 \pm \sqrt{4^2 - (4 \times 1 \times -95)}}{2(1)}$ $x = -11,95 \quad \text{or / of } x = 7,95$ $\therefore x = -12$	✓ $QP^2$ A  ✓ $QR^2$ A  ✓ $QP^2 = QR^2$ CA ✓ Std Form / <i>Std Vorm</i> CA  ✓ SF                      CA  ✓ $x = -12$ CA	(6)
1.5.3	$PR = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ $PR = \sqrt{(-12 - 10)^2 + (-4 - (-1))^2}$ $PR = \sqrt{493}$ $PR = 22 \text{ units / eenhede}$	✓ SF                      CA ✓ S                        CA ✓ PR                      CA	(3)
			[22]

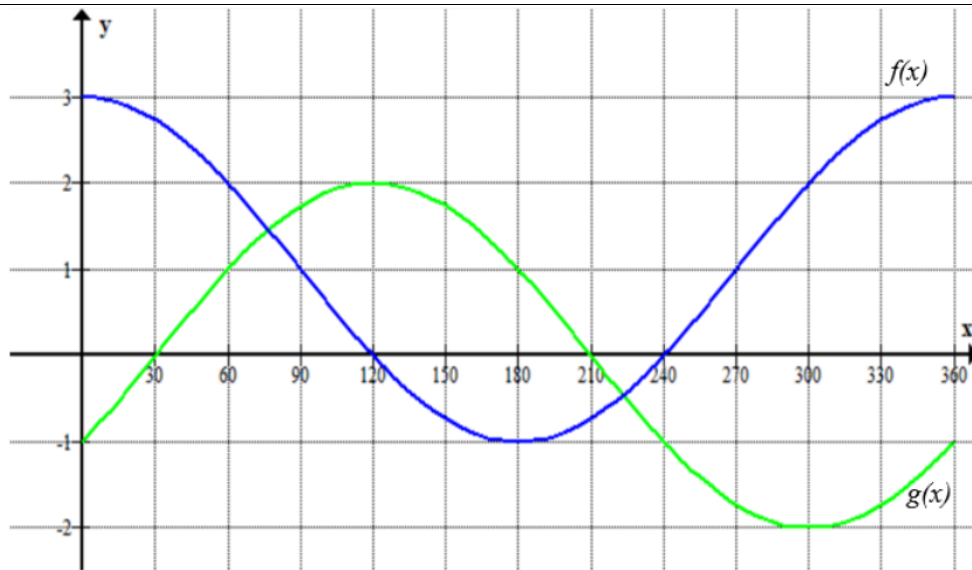
## QUESTION/VRAAG 2

2.1.1	$\sin(31,24^\circ) + \cos(66,27^\circ)$ $= 0,92$	✓ Subst ✓ Ans / Ant	<b>A</b> <b>CA</b>	(2)
2.1.2	$\frac{\cot Y + \tan^2 Z}{\sec Y \cdot \operatorname{cosec} Z}$ $= \frac{\cot(31,24^\circ) + \tan^2(66,27^\circ)}{\sec(31,24^\circ) \cdot \operatorname{cosec}(66,27^\circ)}$ $= \frac{1}{\tan(31,24^\circ)} + \tan^2(66,27^\circ)$ $= \frac{1}{\cos(31,24^\circ)} \cdot \frac{1}{\sin(66,27^\circ)}$ $= 5,34$	✓ Subst  ✓ S  ✓ Ans / Ant	<b>A</b>  <b>CA</b>  <b>CA</b>	(3)
2.2.1	$\sin \beta = \frac{y}{r} = \frac{4}{5}$	✓ Ans / Ant	<b>A</b>	(1)
2.2.2	$x^2 + y^2 = r^2$ $p^2 + (4)^2 = (5)^2$ $p^2 = 25 - 16$ $p = \pm\sqrt{9}$ $\therefore p = -3$	✓ Pyth ✓ Subst  ✓ S ✓ $p = -3$	<b>A</b> <b>A</b>  <b>CA</b> <b>CA</b>	(4)
2.2.3	$\frac{\sec^2 \beta}{\cot \beta} = \frac{\left(\frac{5}{-3}\right)^2}{\frac{-3}{4}}$ $= \frac{25}{9} \times \frac{4}{-3}$ $= -\frac{100}{27}$	✓ $\left(\frac{5}{-3}\right)^2$  ✓ $\frac{-3}{4}$  ✓ Ans / Ant	<b>A</b>  <b>CA</b>  <b>CA</b>	(3)

2.3	$3 \tan x + 4 = 3$ $\tan x = \frac{3 - 4}{3}$ $\text{Ref } \angle = \tan^{-1}\left(\frac{1}{3}\right) = 18,43^\circ$ <p><i>2<sup>nd</sup> Quadrant / Kwadrant</i>  <math>x = 180^\circ - 18,43^\circ</math>  <math>x = 161,57^\circ</math></p> <p><i>4<sup>th</sup> Quadrant / Kwadrant</i>  <math>x = 360^\circ - 18,43^\circ</math>  <math>x = 341,57^\circ</math></p>	<p>✓ S                    A</p> <p>✓ <math>\tan^{-1}\left(-\frac{1}{3}\right)</math> CA</p> <p>✓ Ref / Verw &lt; CA</p> <p>✓ <math>x = 161,57^\circ</math> CA</p> <p>✓ <math>x = 341,57^\circ</math> CA</p>	(5)
			<b>[18]</b>

QUESTION/VRAAG 3			
3.1.1	$\cot^2 \theta$	✓ Ans / Ant	A (1)
3.1.2	1	✓ Ans / Ant	A (1)
3.2	$\frac{\tan^2(360^\circ+x) \cdot \sin(180^\circ+x) \cdot \cos(-x)}{\cos(180^\circ+x) \cdot \sin(360^\circ-x) \cdot \tan 315^\circ}$ $= \frac{\tan^2 x \cdot -\sin x \cdot \cos x}{(-\cos x) \cdot (-\sin x) \cdot (-1)}$ $= \tan^2 x$	✓ $\tan^2 x$ A ✓ $-\sin x$ A ✓ $\cos x$ A ✓ $-\cos x$ A ✓ $-\sin x$ A ✓ $-1$ CA ✓ Ans / Ant      CA	(7)
3.3	$LHS = \frac{\sin x}{1 - \cos x} - \frac{\sin x}{1 + \cos x}$ $= \frac{\sin x(1 + \cos x) - \sin x(1 - \cos x)}{1 - \cos^2 x}$ $= \frac{\sin x + \sin x \cos x - \sin x + \sin x \cos x}{1 - \cos^2 x}$ $= \frac{2 \sin x \cos x}{\sin^2 x}$ $= \frac{2 \cos x}{\sin x}$ $= 2 \cot x$ $= RHS$	✓ S      A ✓ $1 - \cos^2 x$ A ✓ $2 \sin x \cos x$ A ✓ $\sin^2 x$ A ✓ $\frac{2 \cos x}{\sin x}$ CA	(5)
			<b>[14]</b>

## QUESTION/VRAAG 4



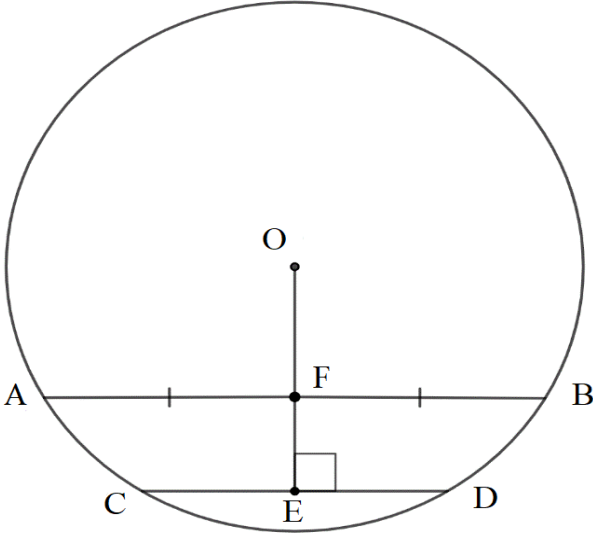
4.1	$a = 2$ $b = 2$ $q = 1$	$\checkmark a$ A $\checkmark b$ A $\checkmark q$ A	(3)
4.2	$360^\circ$	$\checkmark$ Ans / Ant      A	(1)
4.3	Amplitude of $g = 2$	$\checkmark$ Ans / Ant      A	(1)
4.4	$x = 0^\circ$ $x = 300^\circ$ $x = 360^\circ$	$\checkmark 0^\circ$ A $\checkmark 300^\circ$ A $\checkmark 360^\circ$ A	(3)
			<b>[8]</b>



**QUESTION/VRAAG 5**

5.1	Kite	✓ Ans / Ant	A	(1)
5.2	$\frac{AS}{\sin \hat{H}} = \frac{HA}{\sin \hat{S}}$ $AS = \frac{HA \times \sin \hat{H}}{\sin \hat{S}}$ $AS = \frac{11 \times \sin 53^\circ}{\sin 47^\circ}$ $AS = 12,01 \text{ m}$	✓ Sine Rule / Reël  ✓ SF  ✓ Ans / Ant	A  A  CA	   (3)
5.3	$SG^2 = AS^2 + AG^2 - 2 \cdot AS \cdot AG \cdot \cos \hat{A}$ $SG^2 = (12,01)^2 + (27)^2 - 2(12,01)(27) \cos 37^\circ$ $SG = \sqrt{355,293...}$ $SG = 18,85 \text{ m}$	✓ Cosine Rule / Reël ✓ SF ✓ S ✓ Ans / Ant	A CA CA CA	   (4)
5.4	$\text{Area } \Delta = \frac{1}{2} \times AS \times AG \times \sin \hat{A}$ $= \frac{1}{2} \times 12,01 \times 27 \times \sin 37^\circ$ $= 97,58 \text{ m}^2$	✓ F  ✓ SF ✓ Ans / Ant	A  CA CA	  (3)
				<b>[11]</b>

QUESTION/VRAAG 6

			
<p>6.1.1</p>	<p><math>OE - 10 = OF</math>  <math>OE = x + 10</math></p>	<p>✓ ST      A                  ✓ OE      A</p>	<p>(2)</p>
<p>6.1.2</p>	<p><math>OC^2 = CE^2 + OE^2</math>      Pythagoras Theorem  <math>OC^2 = (24)^2 + (x + 10)^2</math>  <math>OC = \sqrt{576 + x^2 + 20x + 100}</math>  <math>OC = \sqrt{x^2 + 20x + 676}</math></p> <p style="text-align: center;"><b>OR / OF</b></p> <p>OC = OA      Radii  <math>OA^2 = AF^2 + OF^2</math>  <math>\therefore OC^2 = (40)^2 + x^2</math>  <math>\therefore OC = \sqrt{1600 + x^2}</math></p>	<p>✓ ST/RE      A                  ✓ S      CA                  ✓ OC      CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓ ST/RE      A                  ✓ S      CA                  ✓ OC      CA</p>	<p>(3)</p>

6.2	<p>OC = OA                  Radii</p> $OC^2 = OA^2$ $x^2 + 20x + 676 = x^2 + 1600$ $20x = 1600 - 676$ $20x = 924$ $x = \frac{924}{20}$ $x = 46,2 \text{ m}$ <p style="text-align: center;"><b>OR / OF</b></p> <p>OC = OA                  Radii</p> $OC^2 = OA^2$ $x^2 + 20x + 676 = x^2 + 1600$ $20x = 1600 - 676$ $20x = 924$ $x = \frac{924}{20}$ $x = 46,2 \text{ m}$	<p>✓ ST ✓ RE                  A</p> <p>✓ <math>x^2 + 1600</math>                  CA</p> <p>✓ S                                  CA</p> <p>✓ Value of / <i>Waarde</i> van <math>x</math>                                  CA</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓ ST ✓ RE                  A</p> <p>✓ <math>x^2 + 20x + 676</math>                  CA</p> <p>✓ S                                  CA</p> <p>✓ Value of / <i>Waarde</i> van <math>x</math>                                  CA</p>	<p>(5)</p>
			<b>[10]</b>

QUESTION/VRAAG 7			
7.1	Diameter / <i>Middellyn</i>	✓ Ans / <i>Ant</i>	A (1)
7.2			
7.2.1	$\widehat{UZX} = 90^\circ$ ( $\angle$ in a semi-circle / $\angle$ in <i>halwe sirkel</i> ) $\widehat{VUZ} = 90^\circ$ ( $\angle$ in a semi-circle / $\angle$ in <i>halwe sirkel</i> ) $\widehat{OUT} = 90^\circ$ (Tan $\perp$ Rad) $\widehat{OZT} = 90^\circ$ (Tan $\perp$ Rad)	✓ ST / RE ✓ ST ✓ ST / RE ✓ ST	A A A A (4)
7.2.2	$\widehat{V}_1 = \widehat{U}_4$ (tanchord / <i>raaklynkoord</i> ) $\widehat{U}_4 = 90^\circ - 38^\circ$ (Tan $\perp$ Rad) $\therefore \widehat{V}_1 = 52^\circ$  $\widehat{X} = \widehat{V}_1 = 52^\circ$ ( $\angle$ 's in the same seg. / $\angle$ 'e in <i>dieselfde seg.</i> ) $\widehat{U}_2 = \widehat{V}_1 = 52^\circ$ ( $\angle$ 's opp = sides / $\angle$ 'e <i>teenoor = sye</i> ) $\widehat{Z}_2 + \widehat{Z}_3 = \widehat{U}_2 = 52^\circ$ ( $\angle$ 's in the same seg. / $\angle$ 'e in <i>dieselfde seg.</i> )	✓ ST ✓ RE  $\widehat{V}_1$ ✓ ST ✓ RE ✓ ST ✓ RE ✓ ST	A  A A A (8)
7.3.1	Tangents from same point / <i>Raaklyne vanuit dieselfde punt</i>	✓ Ans / <i>Ant</i>	A (1)
7.3.2	$\widehat{U}_4 = \widehat{Z}_5 = 52^\circ$ ( $\angle$ 's opp = sides / $\angle$ 'e <i>teenoor = sye</i> ) $T = 180^\circ - (2 \times 52^\circ)$ $T = 76^\circ$	✓ ST  $\widehat{T}$	A  CA (2)

7.4	<p>In <math>\Delta UOZ</math>:  <math>\widehat{U}_3 = \widehat{Z}_4</math> (<math>\angle</math>'s opp = sides / <math>\angle</math>'e teenoor = sye)  <math>\widehat{X} = \widehat{V}_1</math> (<math>\angle</math>'s in the same seg. / <math>\angle</math>'e in dieselfde seg.)  <math>\widehat{Z}_{2+3+4} = \widehat{U}_{2+3} = 90^\circ</math> (<math>\angle</math> in semi-circle / <math>\angle</math> in halwe sirkel)  <math>\Delta UXZ \equiv \Delta ZVU</math> (&lt;&lt;&lt;&lt;)</p>	<p>✓ ST/ RE    A                  ✓ ST        A                  ✓ ST        A                  ✓ RE        A</p>	(4)
7.5	<p><math>\widehat{U}_1 + \widehat{U}_2 = 90^\circ</math> (rad <math>\perp</math> tan)  <math>\widehat{Z}_4 + \widehat{Z}_5 = 90^\circ</math> (rad <math>\perp</math> tan)  <math>\therefore \widehat{U}_1 + \widehat{U}_2 = \widehat{Z}_4 + \widehat{Z}_5 = 90^\circ</math>  <math>\therefore</math> OUTZ is a cq / is 'n kvh                  (ext <math>\angle</math> of quad = opp int <math>\angle</math> /  <i>buite <math>\angle</math> van vh = teenoorst. binne <math>\angle</math></i>)</p> <p style="text-align: center;"><b>OR / OF</b></p> <p><math>\widehat{U}_3 + \widehat{U}_4 = 90^\circ</math> (rad <math>\perp</math> tan)  <math>\widehat{Z}_4 + \widehat{Z}_5 = 90^\circ</math> (rad <math>\perp</math> tan)  <math>\therefore \widehat{U}_3 + \widehat{U}_4 = \widehat{Z}_4 + \widehat{Z}_5 = 180^\circ</math>  <math>\therefore</math> OUTZ is a cq / is 'n kvh                  (opp int <math>\angle</math>'s suppl / <i>teenoorst. binne <math>\angle</math>'e suppl.</i>)</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>OU = OZ (radii)  <math>\widehat{U}_3 = \widehat{Z}_4 = 38^\circ</math> (<math>\angle</math>'s opp = sides / <math>\angle</math>'e teenoor = sye)  <math>\widehat{O}_2 = 104^\circ</math> (Int. <math>\angle</math>'s / <i>binne <math>\angle</math>'e <math>\Delta</math></i>)  <math>\therefore \widehat{O}_2 + \widehat{T} = 180^\circ</math>  <math>\therefore</math> OUTZ is a cq / is 'n kvh                  (opp int <math>\angle</math>'s suppl / <i>teenoorst. binne <math>\angle</math>'e suppl.</i>)</p>	<p>✓ ST/ RE    A                  ✓ ST        A                  ✓ ST        A                  ✓ RE        A</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓ ST/ RE    A                  ✓ ST        A                  ✓ ST        A                  ✓ RE        A</p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓ ST/ RE    A                  ✓ ST        A                  ✓ ST        A                  ✓ RE        A</p>	(4)
			<b>[24]</b>

## QUESTION/VRAAG 8

8.1	Equal / Gelyk	✓ Ans / Ant A	(1)
8.2.1	$\hat{O}_2 = 140^\circ$ ( $\angle$ 's on str. line / $\angle$ 'e op reguitlyn) $\hat{D}_2 = \frac{140^\circ}{2} = 70^\circ$ ( $\angle$ at centre = $2 \times \angle$ at circumf. / midpt $\angle = 2 \times \angle$ by omtrek)	✓ $\hat{O}_2$ A ✓ $\hat{D}_2$ A ✓ RE A	(3)
8.2.2	$\hat{A}_1 = 70^\circ$ ( $\angle$ 's on str. line / $\angle$ 'e op reguitlyn <b>OR</b> / <b>OF</b> ext. $\angle$ of cq / buite $\angle$ van kvh)	✓ST✓RE A	(2)
8.2.3	$\hat{D}_1 + \hat{D}_2 = 90^\circ$ ( $\angle$ in semi-circle / $\angle$ in halwe sirkel) $\therefore \hat{D}_1 = 90^\circ - 70^\circ$ $\therefore \hat{D}_1 = 20^\circ$	✓ST✓RE A ✓ST CA	(3)
			[9]

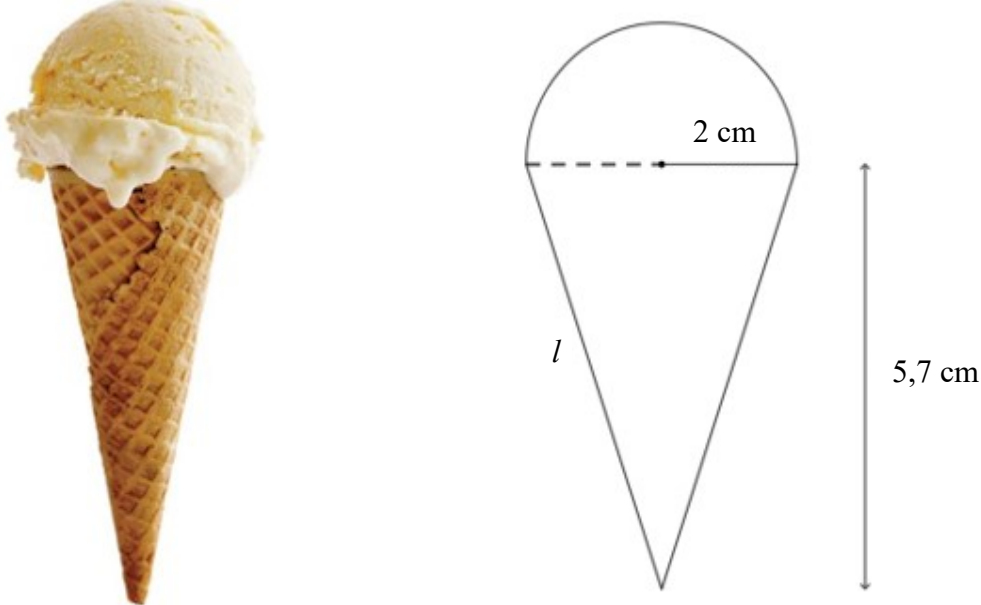
## QUESTION/VRAAG 9

9.1	$271,314^\circ = 217^\circ + (0,314 \times 60)$ $= 217^\circ + 18' + (0,84 \times 60)$ $= 217^\circ 18' 50''$	✓ Conv. / Herlei <b>A</b>  ✓ Ans / Ant <b>A</b>	(2)
9.2.1	$s = r\theta$ $\therefore \theta = \frac{s}{r}$ $\theta = \frac{15}{\left(\frac{25}{2}\right)}$ $\theta = 1,2 \text{ rad}$	✓ F <b>A</b>  ✓ SF <b>A</b> ✓ radius <b>A</b> ✓ $\theta$ <b>CA</b> <b>NPR, NPU</b>	(4)
9.2.2	Area of sector / Opp van sektor = $\frac{1}{2}r^2\theta$ $= \frac{1}{2} \times \left(\frac{25}{2}\right)^2 \times (1,2)$ $= 93,75 \text{ m}^2$  <b>OR / OF</b>  Area of sector / Opp van sektor = $\frac{rs}{2}$ $= \frac{\left(\frac{25}{2}\right) \times 15}{2}$ $= 93,75 \text{ m}^2$	✓ F <b>A</b>  ✓ SF <b>CA</b>  ✓ Area / Opp <b>CA</b> <b>NPU, NPR</b> <b>AO Full Marks /</b> <b>Volpunte</b>  <b>OR / OF</b>  ✓ F <b>A</b>  ✓ SF <b>CA</b>  ✓ Area / Opp <b>CA</b> <b>NPU, NPR</b> <b>AO Full Marks /</b> <b>Volpunte</b>	(3)
9.3.1	$\frac{1200}{1 \text{ min}} \times \frac{1}{60 \text{ s}} = 20 \text{ rps}$	✓ Ans / Ant <b>A</b> <b>NPU</b>	(1)
9.3.2	$\omega = 2\pi n$ $\omega = 2 \times \pi \times 20$ $\omega = 40\pi \text{ rad / s}$ $\omega \approx 125,66 \text{ rad / s}$	✓ F <b>A</b> ✓ SF <b>CA</b>  ✓ Ans / Ant <b>CA</b>	(3)





QUESTION/VRAAG 10		
10.1	$A_T = a \left( \frac{o_1 + o_n}{2} + o_2 + o_3 + o_4 + o_5 + o_{n-1} \right)$ $306,60 = \frac{42}{6} \left( \frac{8 + 5}{2} + 7 + 6 + y + 8,7 + 9 \right)$ $306,60 = 7(37,2 + y)$ $\therefore y = \frac{306,60}{7} - 37,2$ $y = 6,6 \text{ m}$ <p style="text-align: center;"><b>OR / OF</b></p> $A_T = a(m_1 + m_2 + m_3 + m_4 + \dots + m_{n-1})$ $306,60 = \frac{42}{6} \left( \frac{8 + 7}{2} + \frac{7 + 6}{2} + \frac{6 + y}{2} + \frac{y + 8,7}{2} + \frac{8,7 + 9}{2} + \frac{9 + 5}{2} \right)$ $\frac{306,6}{7} = \frac{597}{20} + \frac{14,7 + 2y}{2}$ $\frac{279}{20} = \frac{147}{20} + y$ $\therefore y = 6,6 \text{ m}$	<p>✓F            <b>A</b></p> <p>✓ SF            <b>A</b></p> <p>✓ <math>a = \frac{42}{6}</math>            <b>A</b></p> <p>✓S            <b>CA</b></p> <p>✓ Area / Opp            <b>CA</b></p> <p style="text-align: center;"><b>OR / OF</b></p> <p>✓F            <b>A</b></p> <p>✓ SF            <b>A</b></p> <p>✓ <math>a = \frac{42}{6}</math>            <b>A</b></p> <p>✓S            <b>CA</b></p> <p>✓ Area / Opp            <b>CA</b></p>
		(5)

<p>10.2</p>			
<p>10.2.1</p>	$(l)^2 = (5,7)^2 + (2)^2$ $l = \sqrt{36,49}$ $l = 6,04 \text{ cm}$	<p>✓ M                    A                  ✓ Ans / Ant        CA                  NPR, NPU</p>	<p>(2)</p>
<p>10.2.2</p>	$A_T = \frac{1}{2}(4\pi r^2) + (\pi r^2 + \pi r l)$ $= \frac{1}{2}(4 \times \pi \times (2)^2) + (\pi \times (2)^2 + \pi \times 2 \times 6)$ $= 24\pi$ $= 75,40 \text{ cm}^2$	<p>✓ F                    A                   ✓ SF                    CA                  ✓ Ans / Ant        CA</p>	<p>(3)</p>
<p>10.2.3</p>	$V_T = \frac{1}{2}\left(\frac{4}{3}\pi r^3\right) + \frac{1}{3}\pi r^2 h$ $= \frac{1}{2}\left(\frac{4}{3} \times \pi \times (2)^3\right) + \frac{1}{3} \times \pi \times (2)^2 \times 5,7$ $= 40,63 \text{ cm}^3$ $= 40,63 \text{ cm}^3 \times \frac{1l}{1000 \text{ cm}^3}$ $= 0,04 l$	<p>✓ F                    A                   ✓ SF                    CA                  ✓ Conv/Herlei      CA                  ✓ Volume in l        CA</p>	<p>(4)</p>
			<p>[14]</p>
		<p><b>TOTAAL:</b></p>	<p><b>150</b></p>