



LEARNER'S NAME/  
*NAAM VAN LEERDER:*

CLASS / *KLAS*

**NATIONAL SENIOR CERTIFICATE/  
*NASIONALE SENIORSERTIFIKAAT***

**GRADE/GRAAD 11**

**NOVEMBER 2023**

**TECHNICAL MATHEMATICS P2/TEGNIJSE WISKUNDE V2  
SPECIAL ANSWER BOOK/SPESIALE ANTWOORDEBOEK**

QUESTION/VRAAG	MARKS/PUNTE			HOD/HVD (Level 1 mod./Vlak 1 mod.)			DISTRICT/DISTRIK (Level 2 mod./Vlak 2 mod.)			PROVINCIAL/PROVINSIAAL (Level 3 mod./Vlak 3 mod.)		
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
TOTAL/TOTAAL												

This special answer book consists of 23 pages./  
*Hierdie spesiale antwoordeboek bestaan uit 23 bladsye.*

FOLLOW THESE INSTRUCTIONS CAREFULLY	VOLG HIERDIE INSTRUKSIES NOUKEURIG
<p>1. Answer ALL questions in the spaces provided.</p> <p>2. No pages may be torn from this answer book.</p> <p>3. Answers must be written in black/blue ink as distinctly as possible. Do not write in the margins.</p> <p>4. Indicate the questions you have answered by drawing a circle around the relevant numbers on the front cover of the answer book where marks are to be recorded.</p> <p>5. Draw a line through any work/rough work that must not be marked.</p> <p>6. In the event that you use the additional space provided:</p> <p>6.1 Write down the number of the question</p> <p>6.2 Leave a line and rule off after your answer</p>	<p>1. Beantwoord ALLE vrae in die ruimtes wat voorsien is.</p> <p>2. Geen bladsye mag uit hierdie antwoordeboek geskeur word nie.</p> <p>3. Skryf die antwoorde so duidelik moontlik met swart/blou ink. Moenie in die kantlyn skryf nie.</p> <p>4. Dui die vrae wat jy beantwoord het aan op die voorblad van die antwoordeboek waar die punte aangebring is, deur 'n kringetjie te trek om die nommers van die vrae wat jy beantwoord het.</p> <p>5. Trek 'n netjiese lyn deur enige werk/rofwerk wat nie nagesien moet word nie.</p> <p>6. Ingeval jy die bykomende ruimte wat voorsien word, gebruik:</p> <p>6.1 Skryf die nommer van die vraag neer.</p> <p>6.2 Laat 'n lyn oop en trek 'n lyn na jou antwoord</p>

## QUESTION/VRAAG 1

	Solution/Oplossing	Marks/ Punte
1.1		(1)
1.2		(3)
1.3		(3)

	<b>Solution/Oplossing</b>	<b>Marks/ Punte</b>
1.4		(3)
1.5		(4)
1.6		(4)
1.7		(3)
1.8		(5)
		<b>[26]</b>

**QUESTION/VRAAG 2**

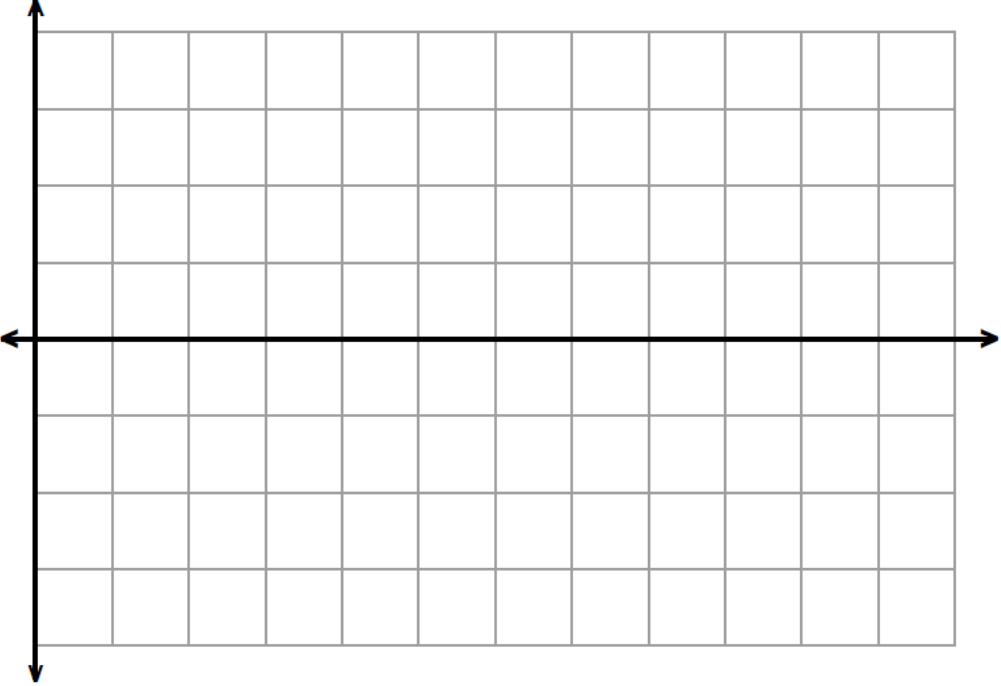
	<b>Solution/Oplossing</b>	<b>Marks/ Punte</b>
2.1.1		(2)
2.1.2		(3)
2.2.1		(4)
2.2.2		(2)

	<b>Solution/Oplossing</b>	<b>Marks/ Punte</b>
2.3		(4)
		<b>[15]</b>

## QUESTION/VRAAG 3

	Solution/Oplissing	Marks/ Punte
3.1	$\frac{\cos(360^\circ - \theta) \cdot \frac{1}{\cot(180^\circ + \theta)} \cdot \tan(360^\circ + \theta)}{\cos(180^\circ + \theta) \cdot \tan(180^\circ - \theta)}$	(6)
3.2	$\left( \tan x + \frac{1}{\cos x} \right)^2 = \frac{1 + \sin x}{1 - \sin x}$	(4)
		[10]

## QUESTION/VRAAG 4

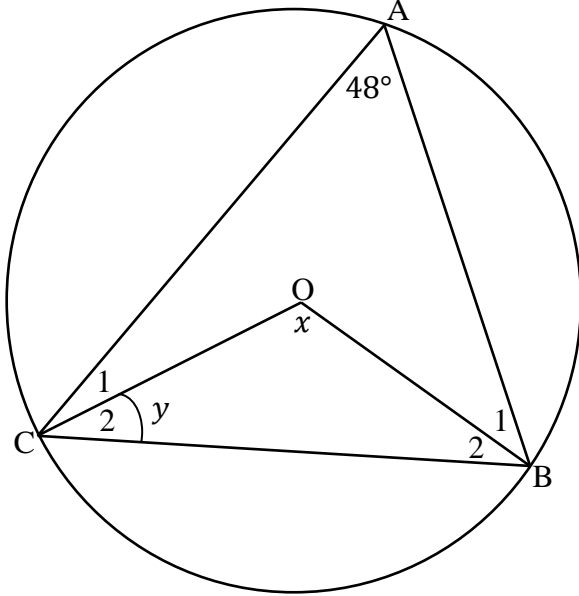
	Solution/Oplissing	Marks/ Punte
4.1		(7)
4.2		(2)
4.3		(1)
4.4		(2)
		[12]



## QUESTION/VRAAG 5

5.1		
		(2)
5.2		
		(3)
5.3		
		(6)
		[11]

## QUESTION/VRAAG 6

	Solution/Oplissing	Marks/ Punte
6.1		(1)
6.2		
6.2.1		(2)
6.2.2		(2)
6.3		(1)

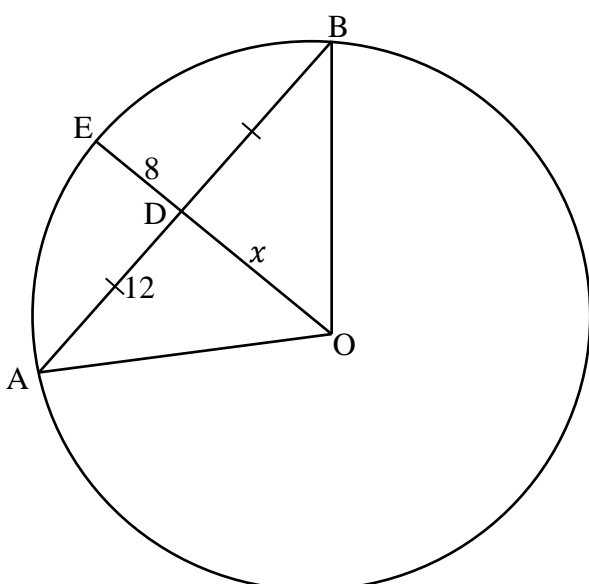
	Solution/Oplissing	Marks/ Punte
6.4		
6.4.1		(2)
6.4.2		(2)
6.4.3		(2)
		[12]

## QUESTION/VRAAG 7

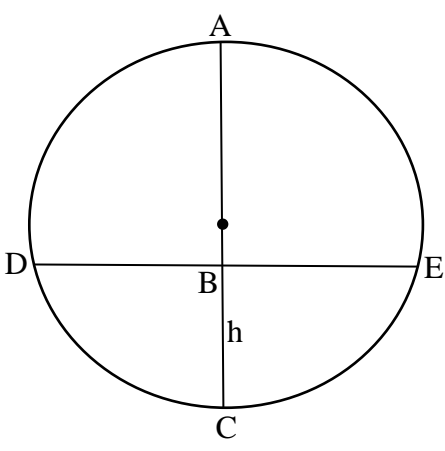
	Solution/Oplissing	Marks/ Punte
7.1		(1)
7.2		(2)
7.2.1		
		(2)
7.2.2		(2)
7.2.3		(4)
7.3		(1)

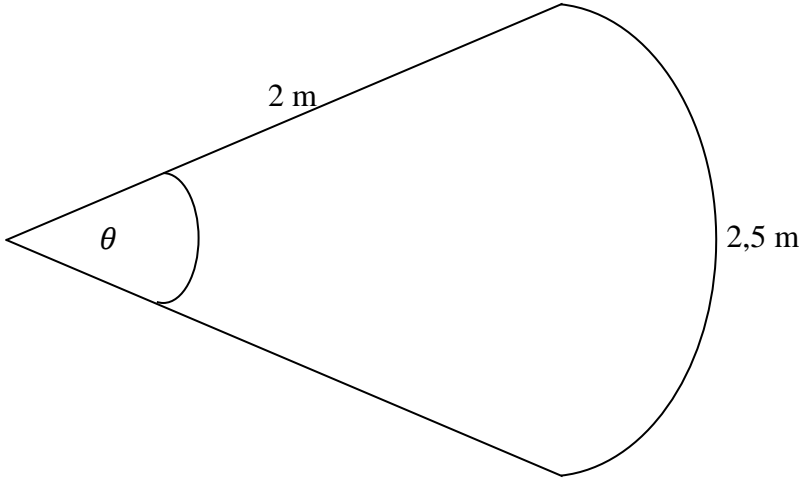
	Solution/ <i>Oplossing</i>	Marks/ <i>Punte</i>
7.4		
7.4.1		(4)
7.4.2		(2)
7.4.3		(4)
		[20]

## QUESTION/VRAAG 8

	Solution/Oplossing	Marks/ Punte
8.1		(1)
8.2		(1)
8.2.1		
		(1)
8.2.2		(3)
		(4)
8.2.3		(1)
8.2.4		[10]

## QUESTION/VRAAG 9

	Solution/Oplissing	Marks/ Punte
9.1		(3)
9.2		(4)
9.3		(6)

	Solution/Oplissing	Marks/ Punte
9.4		
9.4.1	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(3)
9.4.2	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(3)
9.4.3	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(5)



[illegible]



	<b>Additional Space/Addisionele Ruimte</b>	<b>Marks/ Punte</b>

	Additional Space/Addisionele Ruimte	Marks/ Punte

	<b>Additional Space/Addisionele Ruimte</b>	<b>Marks/ Punte</b>

	<b>Additional Space/Addisionele Ruimte</b>	<b>Marks/ Punte</b>

	<b>Additional Space/Addisionele Ruimte</b>	<b>Marks/ Punte</b>