Province of the
EASTERN CAPE
EDUCATION

LEARNER'S NAME/ ***NAAM VAN LEERDER:***	

CLASS/*KLAS*	

NATIONAL SENIOR CERTIFICATE/ *NASIONALE SENIORSERTIFIKAAT*

GRADE/*GRAAD* 12

SEPTEMBER 2023

TECHNICAL MATHEMATICS P2/*TEGNIESE 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												
11												
TOTAL/*TOTAAL*												

This special answer book consists of 25 pages./
Hierdie spesiale antwoordeboek bestaan uit 25 bladsye.

FOLLOW THESE INSTRUCTIONS CAREFULLY	*VOLG HIERDIE INSTRUKSIES NOUKEURIG*
1. Answer ALL questions in the spaces provided.	1. *Beantwoord ALLE vrae in die ruimtes wat voorsien is.*
2. No pages may be torn from this ANSWER BOOK.	2. *Geen bladsye mag uit hierdie ANTWOORDEBOEK geskeur word nie.*
3. Answers must be written in black/blue ink as distinctly as possible. Do not write in the margins.	3. *Skryf die antwoorde so duidelik moontlik met swart/blou ink. Moenie in die kantlyn skryf nie.*
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.	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.*
5. Draw a line through any work/rough work that must not be marked.	5. *Trek 'n netjiese lyn deur enige werk/ rofwerk wat nie nagesien moet word nie.*
6. In the event that you use the additional space provided:	6. *Ingeval jy die bykomende ruimte wat voorsien word, gebruik:*
6.1 Write down the number of the question.	6.1 *Skryf die nommer van die vraag neer.*
6.2 Leave a line and rule off after your answer.	6.2 *Laat 'n lyn oop en trek 'n lyn na jou antwoord.*

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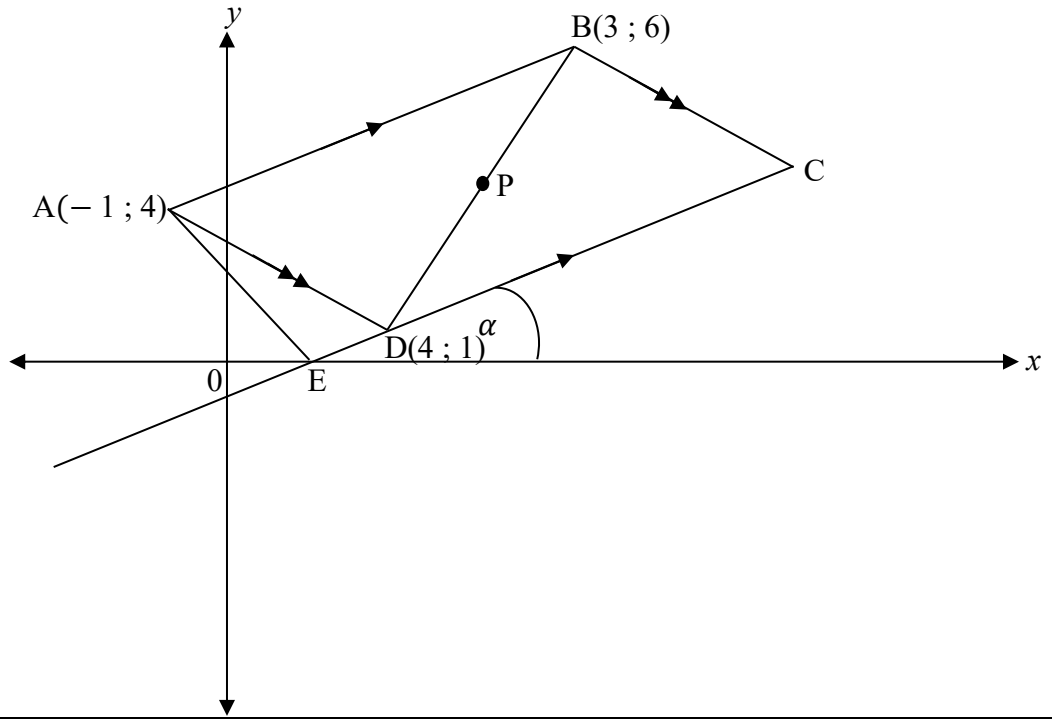
QUESTION/*VRAAG* 1

	Solution/*Oplossing*	**Marks** ***Punte***
		
1.1		(2)
1.2		(2)
1.3		(3)

	Solution/*Oplossing*	**Marks** ***Punte***
1.4		(2)
1.5		(4)
1.6		(4)
		[17]

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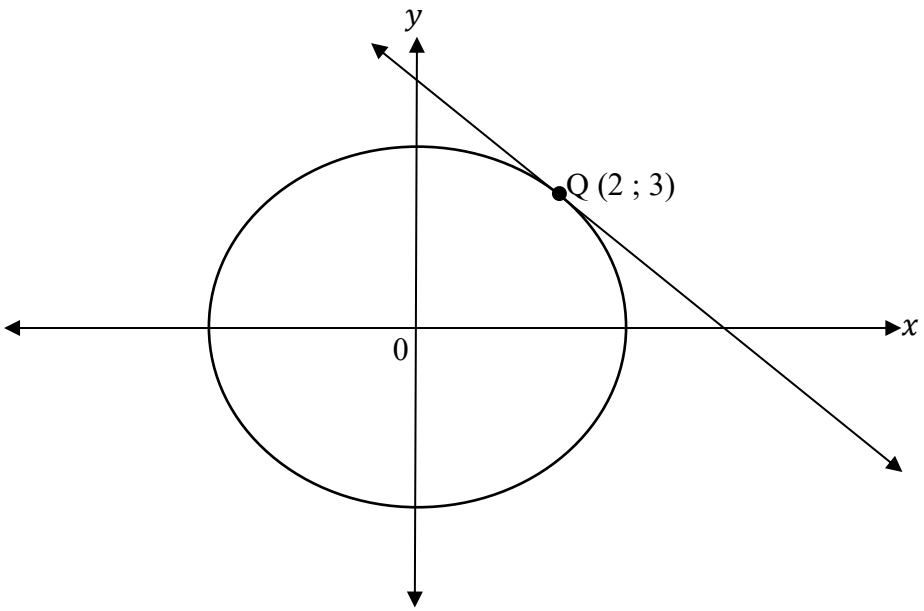
QUESTION/*VRAAG* 2

	Solution/*Oplossing*	Marks *Punte*
		
2.1.1		(2)
2.1.2		(3)

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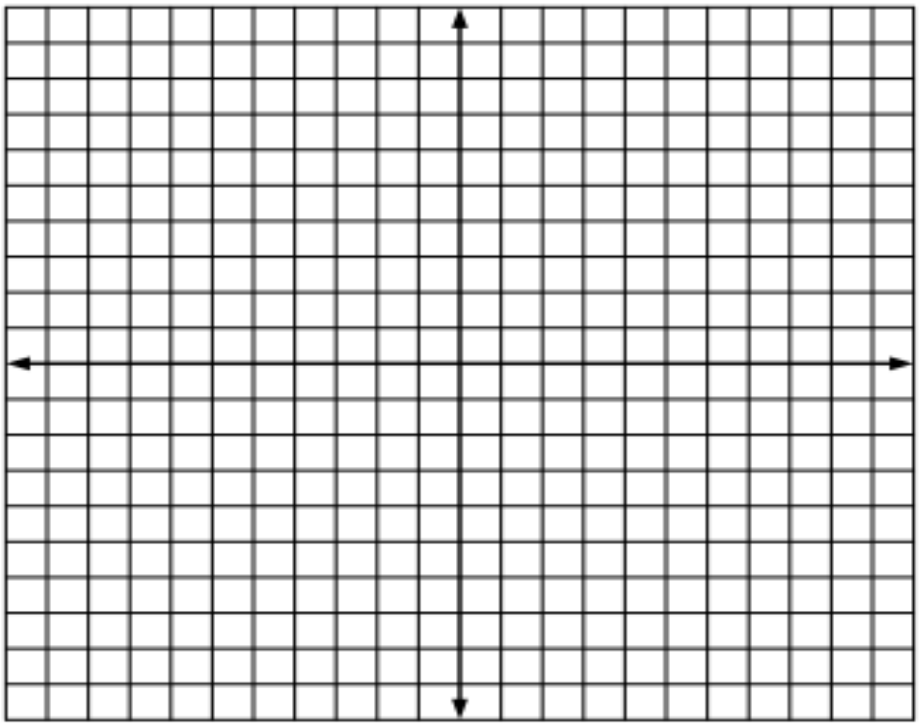
	Solution/*Oplossing*	**Marks** ***Punte***
2.2		
		(3)
		[8]

QUESTION/*VRAAG* 3

	Solution/*Oplossing*	**Marks** ***Punte***
3.1.1		(2)
3.1.2		(3)
3.2.1		(3)
3.2.2		(3)

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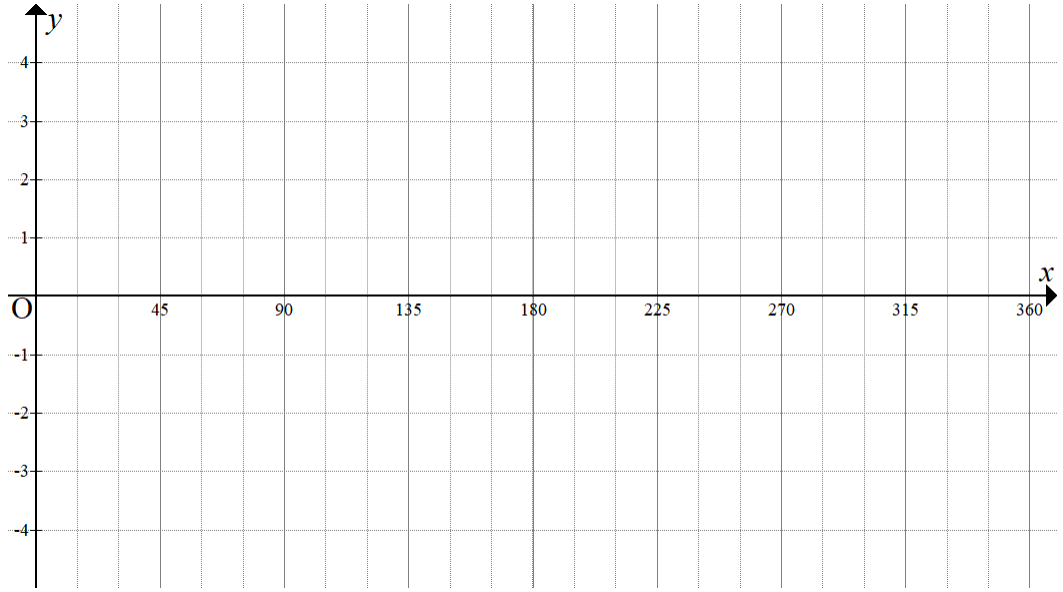
	Solution/*Oplossing*	**Marks** ***Punte***
3.3		
		(4)
		[15]

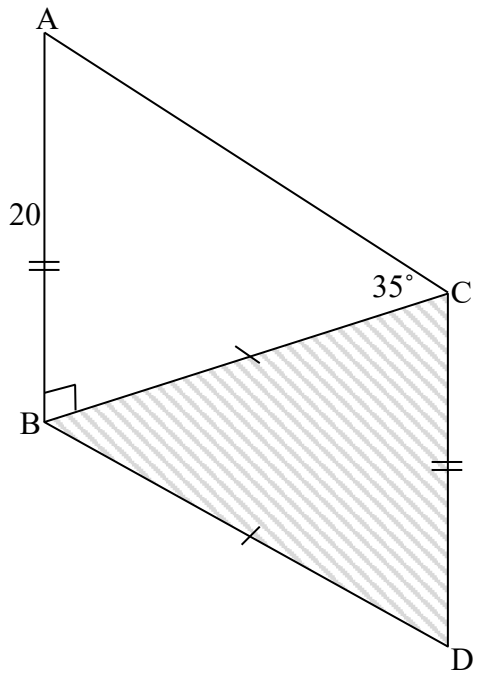
QUESTION/*VRAAG* 4

	Solution/*Oplossing*	**Marks** ***Punte***
4.1	$\text{cosec}^2(180° + \theta) + \dfrac{\sin(180° - \theta).\cot^2(180° + \theta).\sin 270°}{\cos(360° - \theta).\tan(180° + \theta)}$	(9)
4.2	$\dfrac{1}{(1 - \sin\theta)(1 + \sin\theta)} = \sec^2\theta$	(2)
		[11]

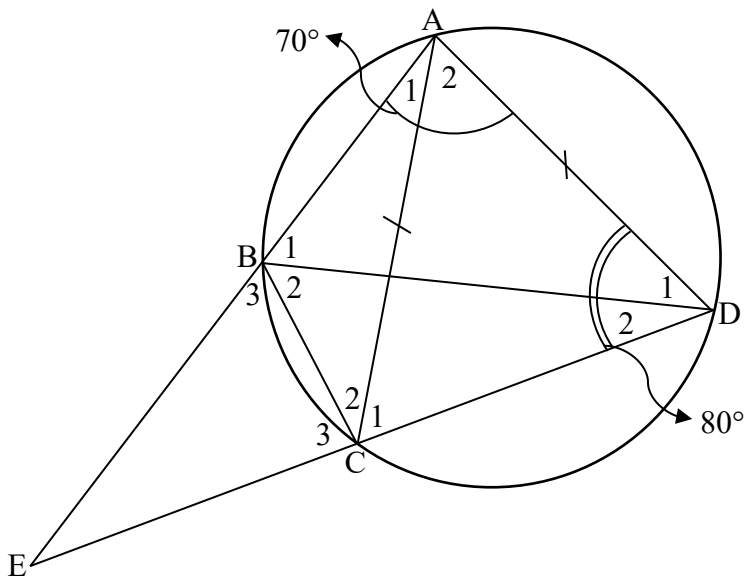
QUESTION/*VRAAG* 5

5.1		(7)
5.2		(2)
5.3		(1)
5.4		(2)
		[12]

QUESTION/*VRAAG* 6

	Solution/*Oplossing*	**Marks** ***Punte***
		
6.1		(3)
6.2		(4)
6.3		(3)
		[10]

QUESTION/*VRAAG* 7

	Solution/*Oplossing*	**Marks** ***Punte***
7.1		(1)
7.2		
7.2.1		(6)
7.2.2 (a)		(2)
7.2.2 (b)		(2)

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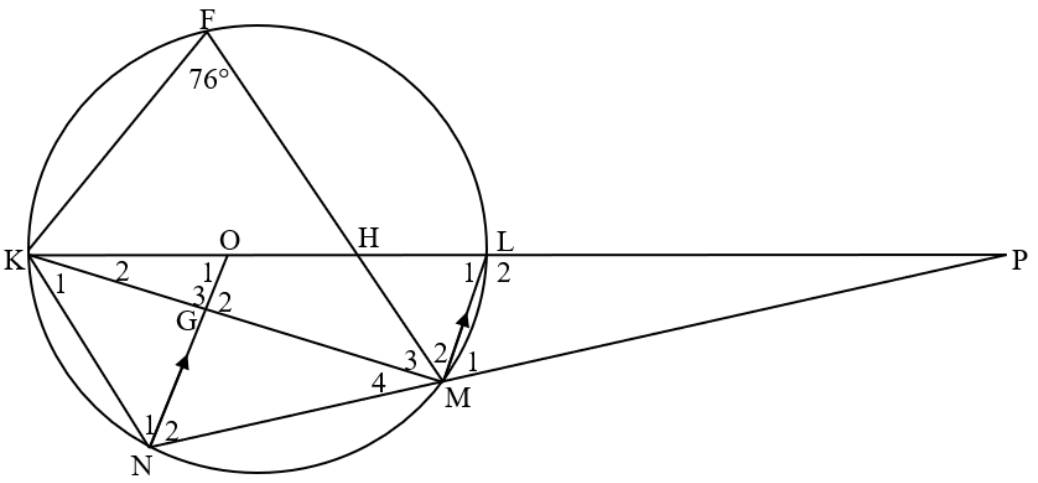
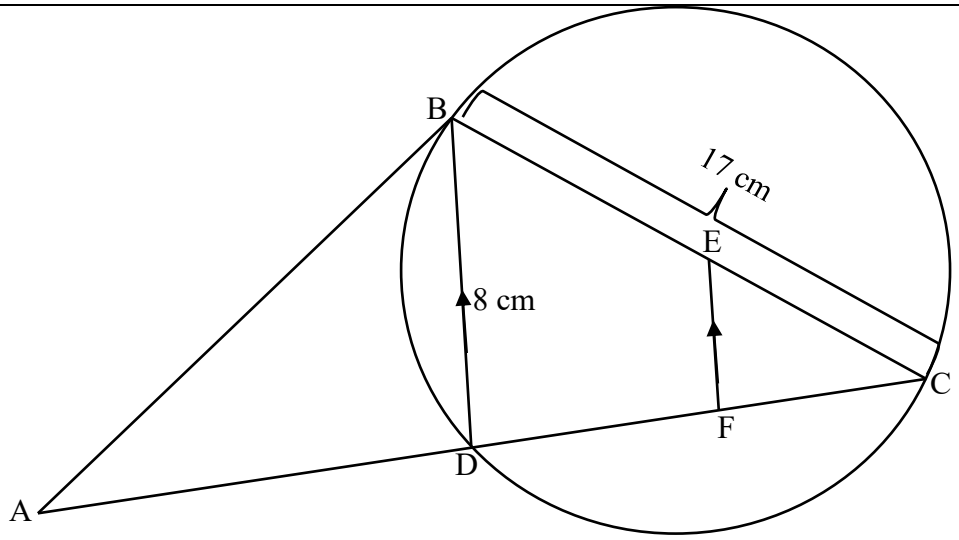
	Solution/*Oplossing*	**Marks** ***Punte***
7.2.2 (c)		
		(3)
7.2.3		
		(2)
		[16]

QUESTION/*VRAAG* 8

	Solution/*Oplossing*	**Marks** ***Punte***
8.1		(1)
8.2		
8.2.1		(2)
8.2.2		(2)
8.2.3		(2)
8.2.4		(2)
		[9]

QUESTION/*VRAAG* 9

	Solution/*Oplossing*	**Marks** ***Punte***
9.1		(1)
9.2		
9.2.1		(4)
9.2.2 (a)		(4)
9.2.2 (b)		(5)

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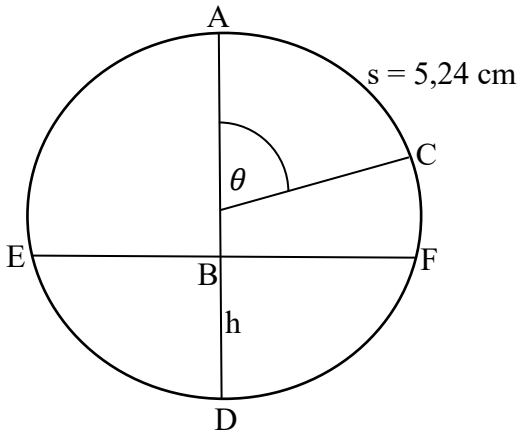
	Solution/*Oplossing*	**Marks** ***Punte***
9.2.2 (c)		
		(4)
		[18]

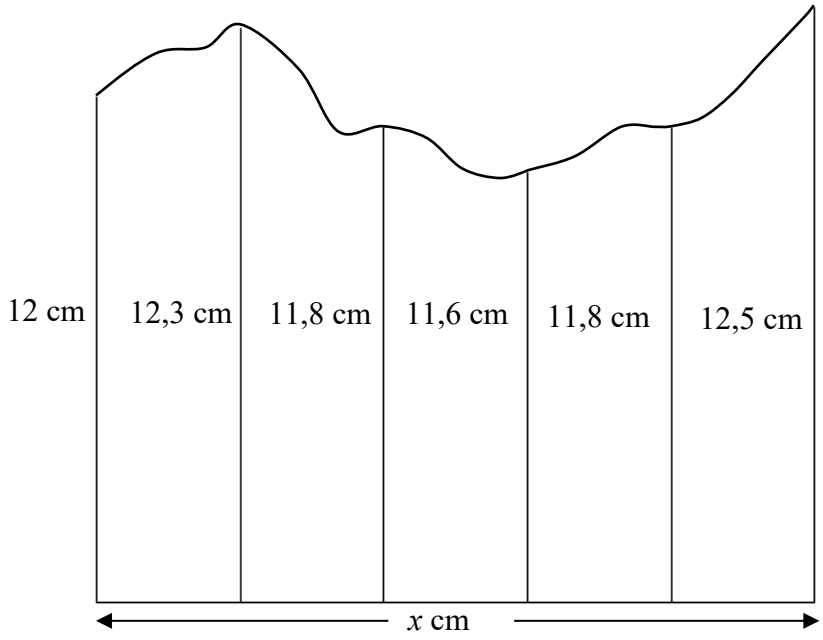
QUESTION/*VRAAG* 10

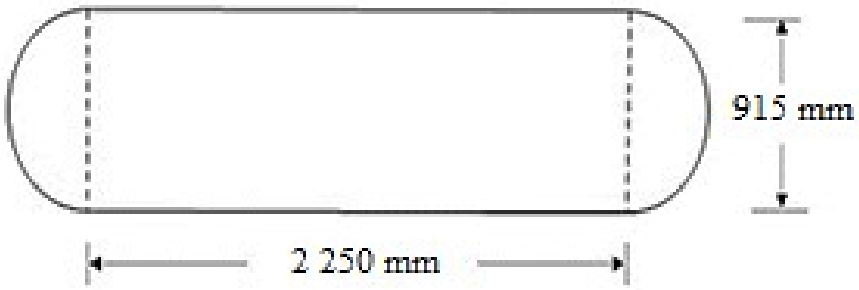
	Solution/*Oplossing*	**Marks** ***Punte***
10.1.1		(1)
10.1.2		(1)
10.1.3		(3)

	Solution/*Oplossing*	**Marks** ***Punte***
10.2		(4)
10.3		
10.3.1		(5)
10.3.2		(4)

	Solution/*Oplossing*	**Marks** ***Punte***
10.3.3		(3)
		[21]

QUESTION/*VRAAG* 11

	Solution/*Oplossing*	**Marks** ***Punte***
11.1		
		(4)

	Solution/*Oplossing*	**Marks** ***Punte***
11.2		
11.2.1		(1)
11.2.2		(4)
11.2.3		(4)
		[13]
	TOTAL/*TOTAAL*	**150**

	Additional Space/*Addisionele Ruimte*	**Marks** ***Punte***

	Additional Space/*Addisionele Ruimte*	**Marks** ***Punte***

	Additional Space/*Addisionele Ruimte*	**Marks** ***Punte***

	Additional Space/*Addisionele Ruimte*	**Marks** ***Punte***

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