



**basic education**  
 Department:  
 Basic Education  
 REPUBLIC OF SOUTH AFRICA

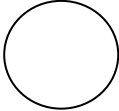
Candidate Barcode label/Stafieskodeplakker

SC/NSC Answer Book  
 SS/NSS Antwoordeboek

**Senior Certificate/National Senior Certificate/Senior Sertifikaat/Nasionale Senior Sertifikaat (Grade 12/Graad 12)**

CENTRE NUMBER  
 SENTRUMNOMMER

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EXAMINATION NUMBER  
 EKSAMENNOMMER

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DATE  
 DATUM

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BOOK NUMBER  
 BOEKNOMMER

		OF VAN		BOOKS BOEKE
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SUBJECT CODE  
 VAKKODE

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PAPER NUMBER  
 VRAESTELNOMMER

	<b>2</b>
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SUBJECT NAME  
 VAKNAAM

**MATHEMATICS/WISKUNDE**

MARKER/NASIENER				MODERATOR'S INITIALS IN RELEVANT BLOCK MODERATOR SE VOORLETTERS IN RELEVANTE BLOKKIE									
Question Vraag	Marks Punte	Marker's code and Initials Nasiener se kode en Voorletters	Marks Punte	SM	Marks Punte	DCM AHN	Marks Punte	CM HN	Marks Punte	IM	Marks Punte	EM	
<b>TOTAL TOTAAL</b>													

CONTROLLED AND CERTIFIED CORRECT  
 (SURNAME AND INITIALS OF EA)  
 GEKONTROLEER EN AS KORREK  
 GESERTIFISEER (VAN EN VOORLETTERS  
 VAN EA)

READ INSTRUCTIONS ON THE NEXT PAGE.  
 LEES INSTRUKSIES OP VOLGENDE BLADSY.

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

PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY	VOLG ASSEBLIEF HIERDIE INSTRUKSIES NOUKEURIG
1. Clearly write your examination number and centre number in the space provided and attach your barcode label in the space provided.	1. Skryf jou eksamennommer en sentrumnummer duidelik in die ruimtes verskaf en plak jou stafieskodeplakker in die ruimte verskaf.
2. Remember that your own name (or the name of your school) may NOT appear anywhere on or in this answer book.	2. Onthou dat jou eie naam (of die naam van jou skool) NIE op of in hierdie antwoordeboek mag voorkom NIE.
3. Answer ALL questions in the spaces provided.	3. Beantwoord ALLE vrae in die ruimtes wat verskaf is.
4. NO pages may be torn from this answer book.	4. GEEN bladsye mag uit hierdie antwoordeboek geskeur word NIE.
5. Read the instructions printed on your timetable carefully as well as any other instructions which may be given in each question paper.	5. Lees die instruksies, wat op jou eksamenrooster gedruk is, sorgvuldig deur, asook enige ander instruksies wat op elke vraestel gegee word.
6. Candidates may NOT retain an answer book or remove it from the examination room.	6. GEEN antwoordeboek mag deur die kandidaat behou of uit die eksamenlokaal verwyder word NIE.
7. Answers must be written in black/blue ink as distinctly as possible. Do NOT write in the margins.	7. Skryf die antwoorde so duidelik moontlik met swart/blou ink. Laat die kantlyne oop.
8. Write the numbers of the questions you have answered on the front cover of the answer book where marks are to be recorded.	8. Skryf die nommers van die vrae wat jy beantwoord het op die voorblad van die antwoordeboek waar die punte aangebring word.
9. If you require additional space for your answers: 9.1 Use the additional space provided at the end of the answer book. 9.2 When answering a question in the additional space, clearly indicate the question number in the column on the LHS. 9.3 Rule off after each answer.	9. In geval jy bykomende ruimte benodig vir jou antwoorde: 9.1 Gebruik die bykomende ruimte wat aan die einde van die antwoordeboek verskaf word. 9.2 As 'n vraag in die bykomende ruimte beantwoord word, dui duidelik die vraagnommer in die kolom aan die LK aan. 9.3 Trek 'n lyn na elke antwoord.
10. Draw a neat line through any work/rough work that must not be marked.	10. Trek 'n netjiese lyn deur enige werk/rofwerk wat nie nagesien moet word nie.

**QUESTION/VRAAG 1**

<b>TIME TAKEN (<math>t</math>) (IN MINUTES)/ <i>TYD GENEEM (<math>t</math>)</i> (IN MINUTE)</b>	<b>NUMBER OF CHILDREN/ <i>GETAL</i> KINDERS</b>
$2 < t \leq 6$	2
$6 < t \leq 10$	10
$10 < t \leq 14$	9
$14 < t \leq 18$	7
$18 < t \leq 22$	8
$22 < t \leq 26$	7
$26 < t \leq 30$	2

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
1.1		(1)
1.2		(2)

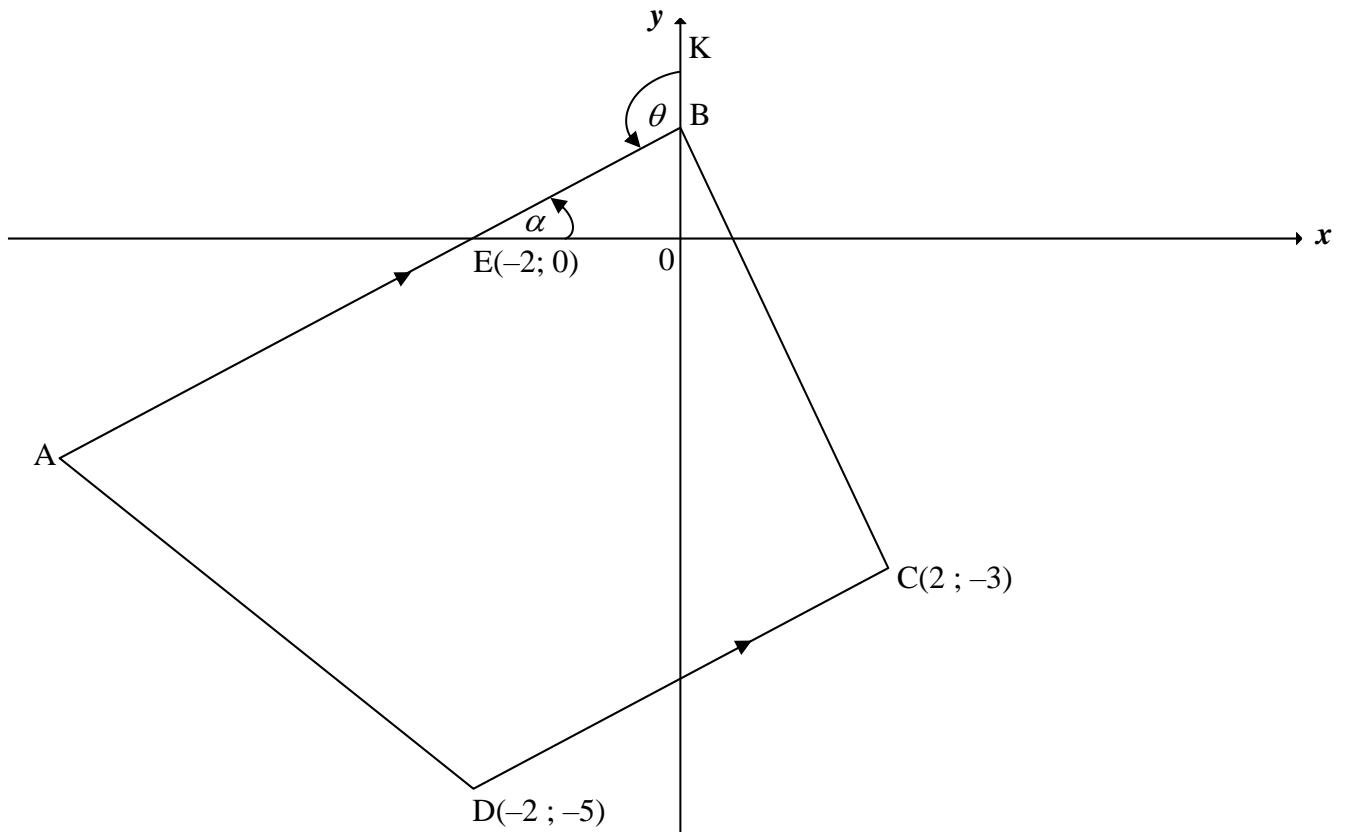
1.3	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Time in minutes (<i>t</i>) <i>Tyd in minute (t)</i></th> <th style="padding: 5px;">Number of children <i>Getal kinders</i></th> <th style="padding: 5px;">Cumulative frequency <i>Kumulatiewe frekwensie</i></th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"><math>2 &lt; t \leq 6</math></td> <td style="padding: 5px;">2</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>6 &lt; t \leq 10</math></td> <td style="padding: 5px;">10</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>10 &lt; t \leq 14</math></td> <td style="padding: 5px;">9</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>14 &lt; t \leq 18</math></td> <td style="padding: 5px;">7</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>18 &lt; t \leq 22</math></td> <td style="padding: 5px;">8</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>22 &lt; t \leq 26</math></td> <td style="padding: 5px;">7</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;"><math>26 &lt; t \leq 30</math></td> <td style="padding: 5px;">2</td> <td style="padding: 5px;"></td> </tr> </tbody> </table>	Time in minutes ( <i>t</i> ) <i>Tyd in minute (t)</i>	Number of children <i>Getal kinders</i>	Cumulative frequency <i>Kumulatiewe frekwensie</i>	$2 < t \leq 6$	2		$6 < t \leq 10$	10		$10 < t \leq 14$	9		$14 < t \leq 18$	7		$18 < t \leq 22$	8		$22 < t \leq 26$	7		$26 < t \leq 30$	2		(2)
Time in minutes ( <i>t</i> ) <i>Tyd in minute (t)</i>	Number of children <i>Getal kinders</i>	Cumulative frequency <i>Kumulatiewe frekwensie</i>																								
$2 < t \leq 6$	2																									
$6 < t \leq 10$	10																									
$10 < t \leq 14$	9																									
$14 < t \leq 18$	7																									
$18 < t \leq 22$	8																									
$22 < t \leq 26$	7																									
$26 < t \leq 30$	2																									
1.4	<p style="text-align: center;"><b>CUMULATIVE FREQUENCY GRAPH (OGIVE)</b> <b>KUMULATIEWEFREKWENSIEGRAFIEK (OGIEF)</b></p>	(3)																								
1.5	<hr style="border: 0.5px solid black;"/> <hr style="border: 0.5px solid black;"/> <hr style="border: 0.5px solid black;"/>	(2)																								
<b>[10]</b>																										

**QUESTION/VRAAG 2**

<b>LEARNER/ LEERDER</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>	<b>L4</b>	<b>L5</b>	<b>L6</b>	<b>L7</b>	<b>L8</b>	<b>L9</b>	<b>L10</b>	<b>L11</b>	<b>L12</b>	<b>L13</b>	<b>L14</b>	<b>L15</b>
<b>TEST 1/ TOETS 1 (%)</b>	10	18	23	24	27	34	34	36	37	39	40	44	45	48	49
<b>TEST 2/ TOETS 2 (%)</b>	33	21	32	20	58	43	49	48	41	55	50	45	62	68	60

	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
2.1		(3)
2.2.1		(1)
2.2.2		(2)
2.3.1		(2)
2.3.2		(2)
		<b>[10]</b>

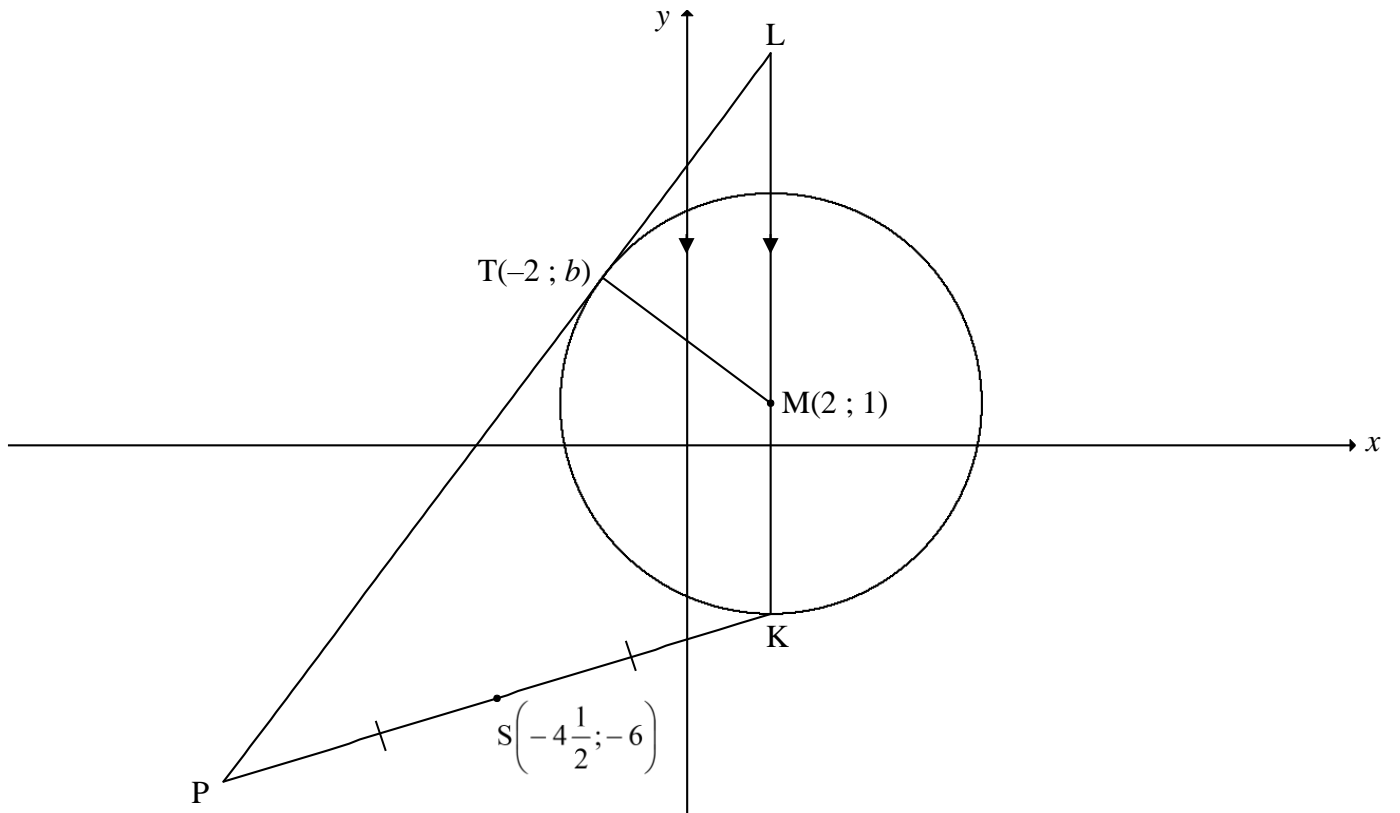
**QUESTION/VRAAG 3**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
3.1.1		(2)
3.1.2		(2)

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
3.1.3		(3)
3.1.4		(3)
3.2		(3)
3.3.1		(1)
3.3.2		(4)
		<b>[18]</b>

**QUESTION/VRAAG 4**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
4.1		(4)
4.2.1		(2)



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
4.2.2		(4)
4.2.3		(7)
4.3		(4)
		<b>[21]</b>

**QUESTION/VRAAG 5**

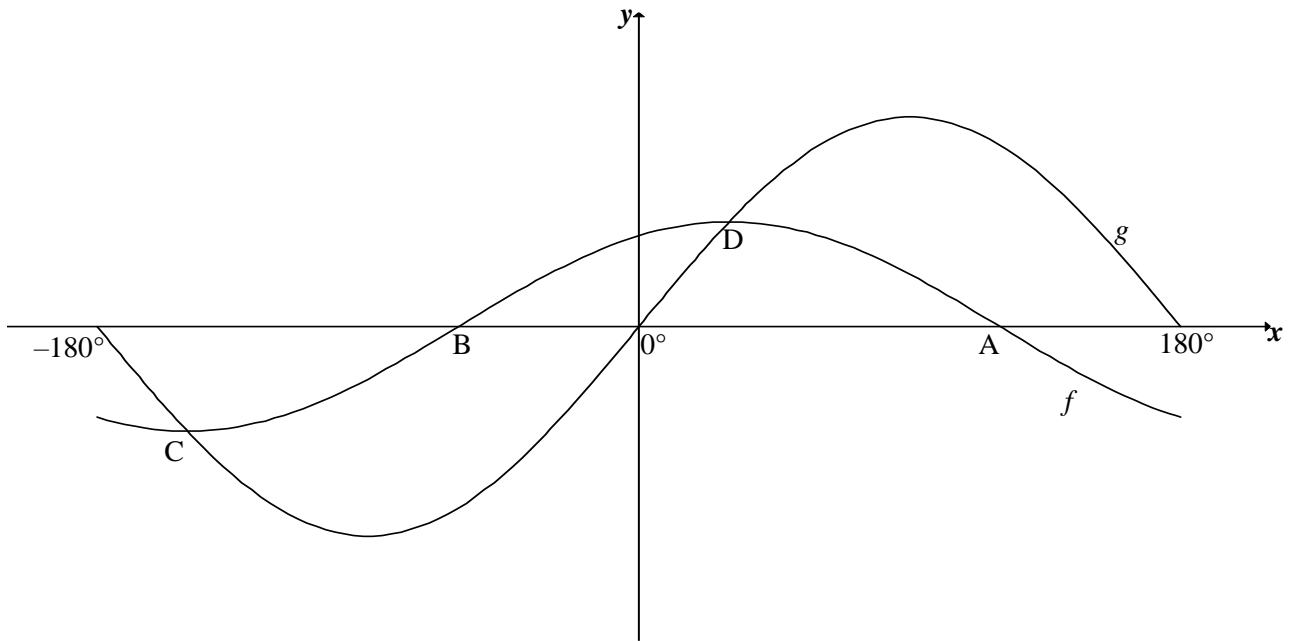
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
5.1.1		(1)
5.1.2		(1)
5.2		(5)

	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
5.3		
		(5)
		<b>[12]</b>

**QUESTION/VRAAG 6**

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
6.1		(6)

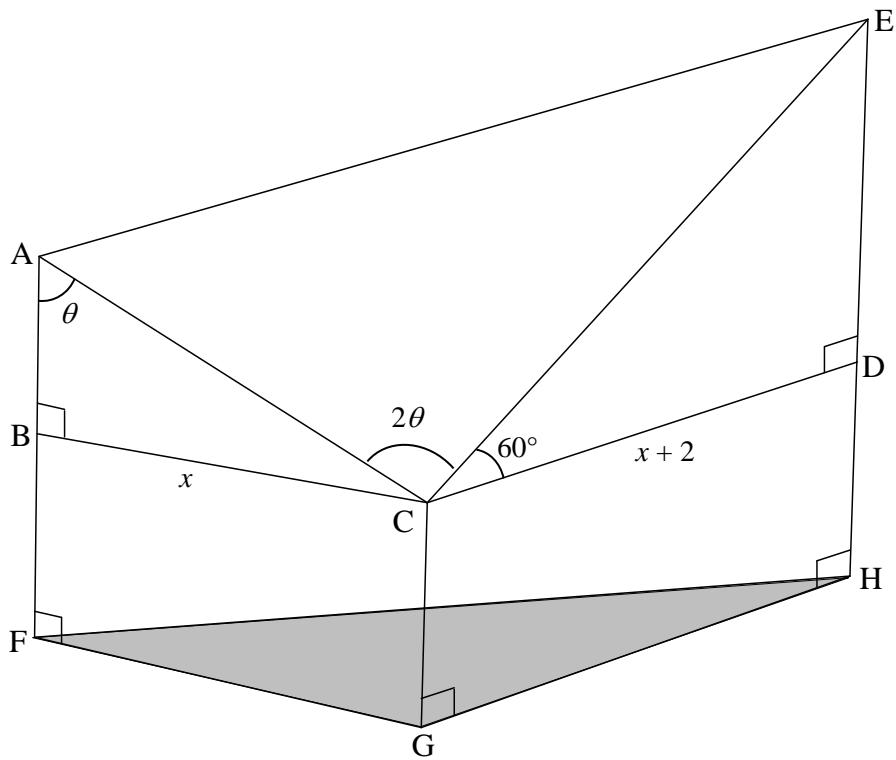
6.2



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
6.2.1(a)		(1)
6.2.1(b)		(2)
6.2.2(a)		(2)
6.2.2(b)		(2)

6.2.3		(5)
<b>[18]</b>		

**QUESTION/VRAAG 7**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
7.1.1		(2)
7.1.2		(2)

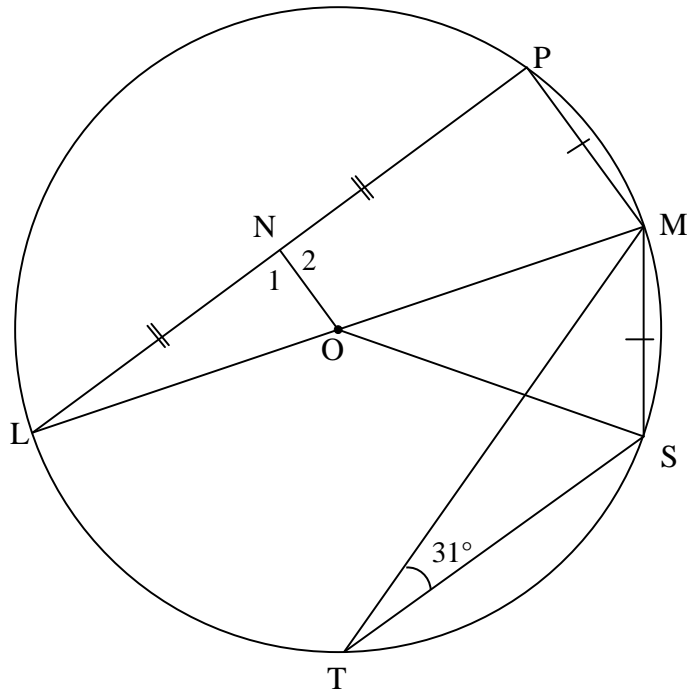
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
7.2		(3)
7.3		(4)
		<b>[11]</b>



**Give reasons for your statements in QUESTIONS 8, 9 and 10.**  
**Gee redes vir jou bewerings in VRAAG 8, 9 en 10.**

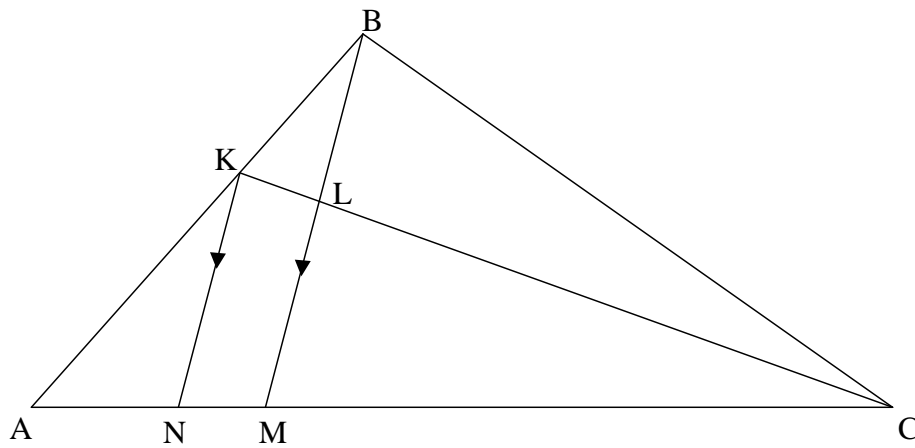
**QUESTION/VRAAG 8**

8.1



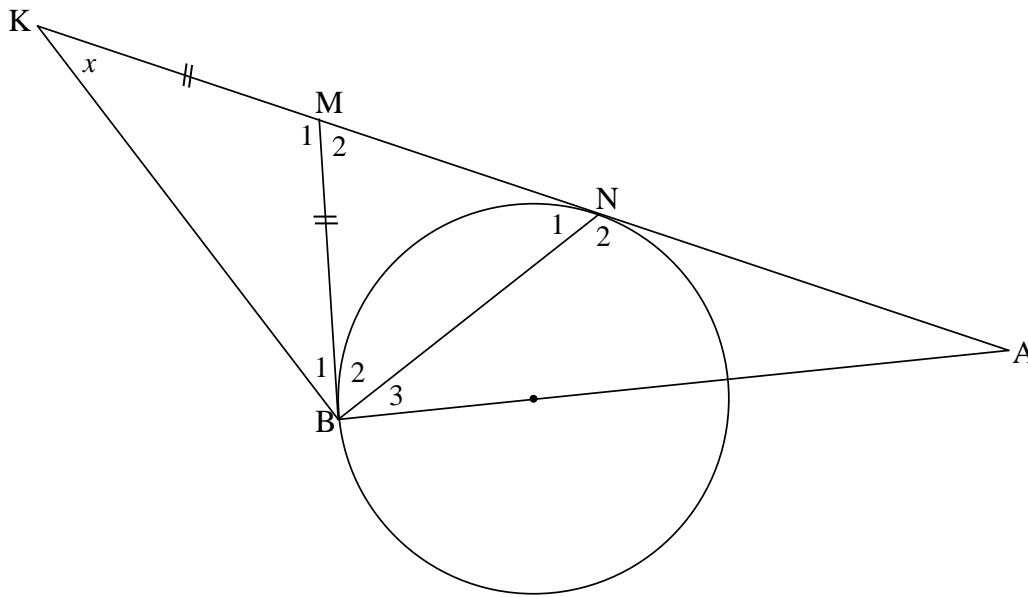
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
8.1.1(a)		(2)
8.1.1(b)		(2)
8.1.2		(4)

8.2



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
8.2.1		(2)
8.2.2		(3)
		<b>[13]</b>

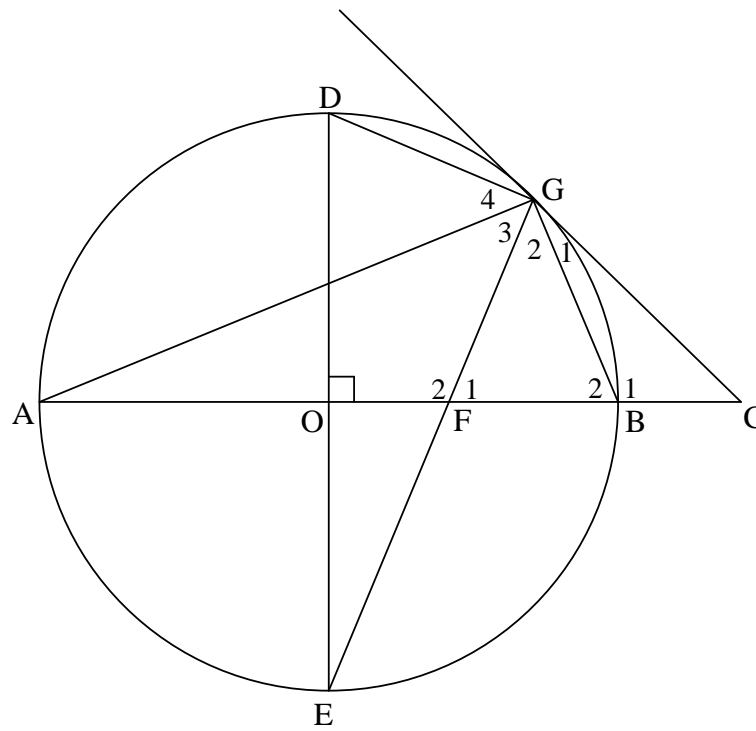
**QUESTION/VRAAG 9**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
9.1		
		(6)
9.2		
		(5)
		<b>[11]</b>



10.2



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
10.2.1(a)		(3)
10.2.1(b)		(5)
10.2.2(a)		(3)

	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
10.2.2(b)		(5)
10.2.2(c)		(4)
		<b>[26]</b>
	<b>TOTAL/TOTAAL:</b>	<b>150</b>

	<b>Additional space/Bykomende ruimte</b>	<b>Marks Punte</b>

	<b>Additional space/<i>Bykomende ruimte</i></b>	<b>Marks <i>Punte</i></b>



<b>RE-MARK/RE-CHECK</b> <i>HERMERK/HERSIEN</i>				
<b>Question</b> <i>Vraag</i>	<b>Marks</b> <i>Punte</i>			<b>Initials</b> <i>Voorletters</i>
<b>TOTAL</b> <b>TOTAAL</b>				
<b>HASH</b> <b>TOTAL</b> <b>KAF-</b> <b>TOTAAL</b>				