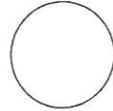# basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

Candidate Barcode Label/*Stafieskodeplakker*

NSC Answer Book
NSS-antwoordeboek

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

Sequence no on mark sheet
Volgnommer op puntestaat

CENTRE NUMBER / *SENTRUMNOMMER*								

EXAMINATION NUMBER / *EKSAMENNOMMER*											

DATE / *DATUM*							BOOK NUMBER / *BOEKNOMMER*		OF / *VAN*		BOOKS / *BOEKE*

SUBJECT CODE / *VAKKODE*						PAPER NUMBER / *VRAESTELNOMMER*	**2**

SUBJECT NAME / *VAKNAAM*	**MATHEMATICS/*WISKUNDE***

This answer book consists of 28 pages./*Hierdie antwoordeboek bestaan uit 28 bladsye.*

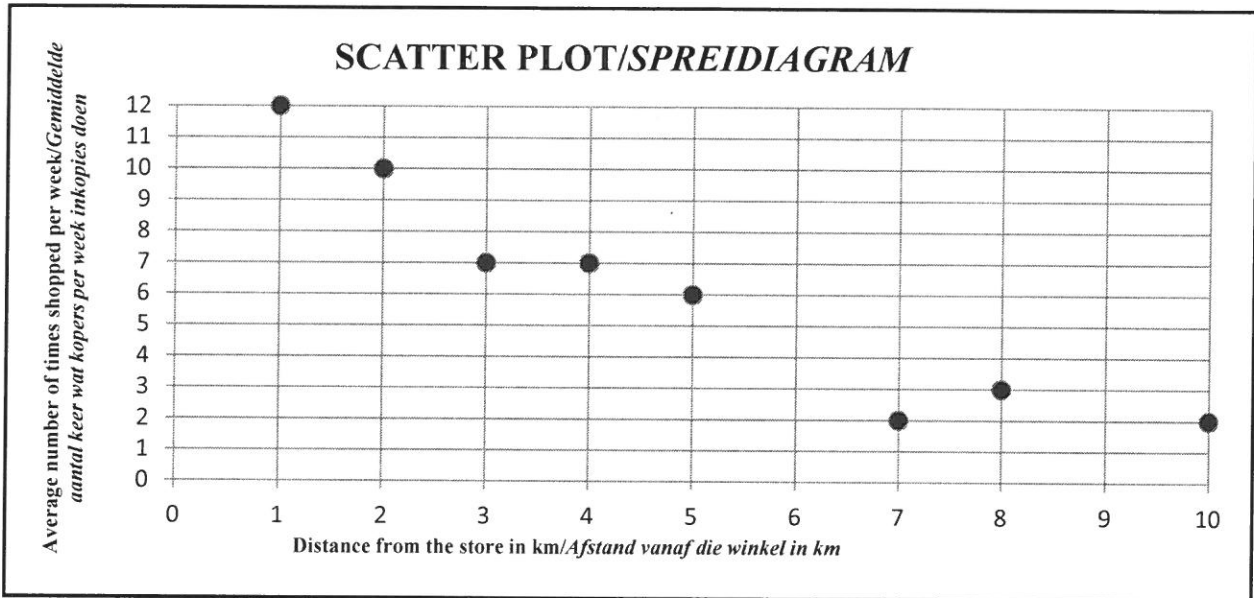| MARKER/*NASIENER*			MODERATOR'S INITIALS IN RELEVANT BLOCK / *MODERATORPARAAF IN BETROKKE BLOKKIE*						RE-MARK/RE-CHECK/ *HERNASIEN/HERKONTROLEER*		
Question *Vraag*	Marks *Punte*	Marker's Code & Initials	Marks *Punte*	SM	DCM	CM	IM	EM	Question *Vraag*	Marks *Punte*	Initials *Paraaf*
1									1		
2									2		
3									3		
4									4		
5									5		
6									6		
7									7		
8									8		
9									9		
10									10		
11									11		
12									12		
13									13		
14									14		
15									15		
16									16		
TOTAL *TOTAAL*									**TOTAL** *TOTAAL*		
									HASH TOTAL *KAFTOTAAL*		

CONTROLLED AND CERTIFIED CORRECT
(SURNAME AND INITIALS OF EA)

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

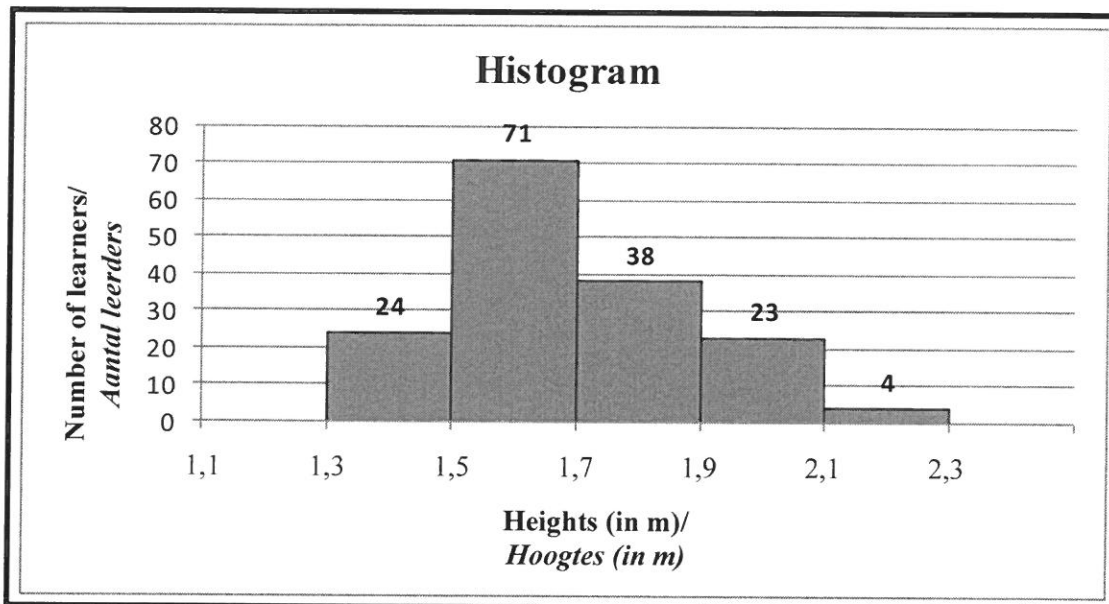| FOLLOW THESE INSTRUCTIONS CAREFULLY	VOLG HIERDIE INSTRUKSIES NOUKEURIG
1. Write your examination number and centre number clearly in the spaces provided and attach your examination number sticker in the space provided.	1. Skryf jou eksamennommer en sentrumnommer duidelik in die ruimtes soos verskaf en plak jou eksamennommeretiket in die ruimte soos 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 voorsien 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 examination paper.	5. Lees die instruksies wat op jou eksamenrooster gedruk is sorgvuldig deur, asook enige ander instruksies wat in elke eksamenvraestel gegee word.
6. Candidates may not retain an answer book or remove it from the examination room. Answer books must be returned to the Invigilator at the end of the examination session.	6. Geen antwoordeboek mag deur die kandidaat behou of uit die eksamenlokaal verwyder word nie. Antwoordeboeke moet aan die Toesighouer terugbesorg word aan die einde van die eksamensessie.
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. Moenie in die kantlyn skryf nie.
8. 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.	8. Dui die vrae wat jy beantwoord het aan op die voorblad van die antwoordeboek waar die punte aangebring word, deur 'n kringetjie te trek om die nommers van die vrae wat jy beantwoord het.
9. Rule off through any work/rough work that must not be marked.	9. Trek 'n netjiese lyn deur enige werk/rofwerk wat nie nagesien moet word nie.
10 In the event that you use the additional space provided: 10.1 Write down the number of the question 10.2 Leave a line and rule off after your answer.	10 Ingeval jy die bykomende ruimte wat voorsien word, gebruik: 10.1 Skryf die nommer van die vraag neer 10.2 Laat 'n lyn oop en trek 'n lyn na jou antwoord.

QUESTION/*VRAAG* 1

Distance from the store in km *Afstand vanaf die winkel in km*	1	2	3	4	5	7	8	10
Average number of times shopped per week *Gemiddelde aantal keer wat kopers per week inkopies doen*	12	10	7	7	6	2	3	2

SCATTER PLOT/*SPREIDIAGRAM*
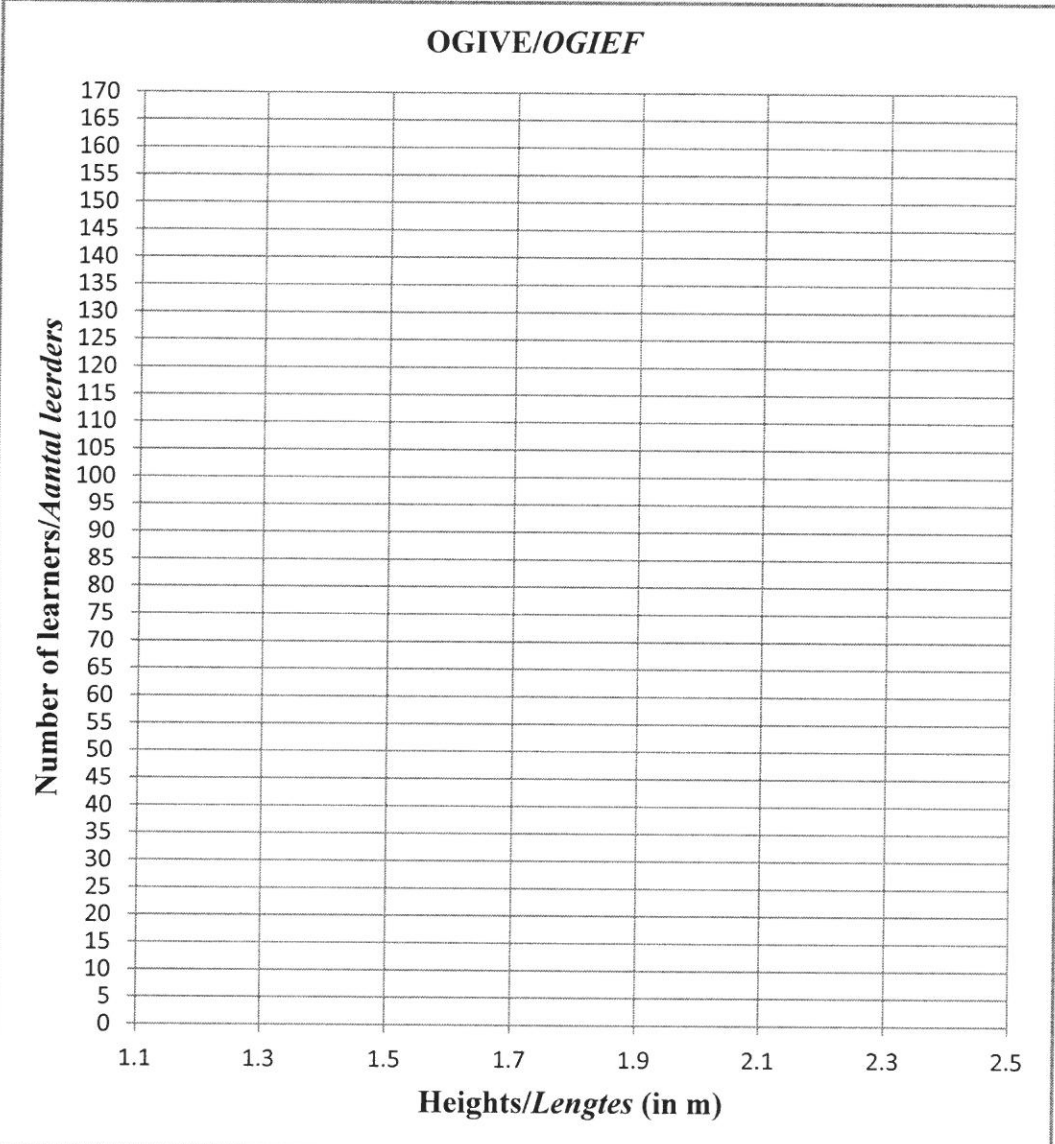
	Solution/*Oplossing*	Marks *Punte*
1.1		(1)
1.2		(1)
1.3		(3)
1.4		(2)
1.5	Draw on the scatter plot above./*Skets op die spreidiagram hierbo.*	(2)
		[9]

QUESTION/*VRAAG* 2

Histogram

	Solution/*Oplossing*	Marks *Punte*
2.1		(1)
2.2		(2)
2.3		(2)

Intervals *Klasse*	Cumulative frequency *Kumulatiewe frekwensie*
$1,3 \le x < 1,5$	
$1,5 \le x < 1,7$	
$1,7 \le x < 1,9$	
$1,9 \le x < 2,1$	
$2,1 \le x < 2,3$	

	Solution/*Oplossing*	Marks *Punte*
2.4	**OGIVE/*OGIEF*** Number of learners/*Aantal leerders* (y-axis: 0 to 170 in intervals of 5) Heights/*Lengtes* (in m) (x-axis: 1.1, 1.3, 1.5, 1.7, 1.9, 2.1, 2.3, 2.5)	(4)
2.5		(2)
2.6.1		(1)
2.6.2		(1)
		[13]

QUESTION/*VRAAG* 3
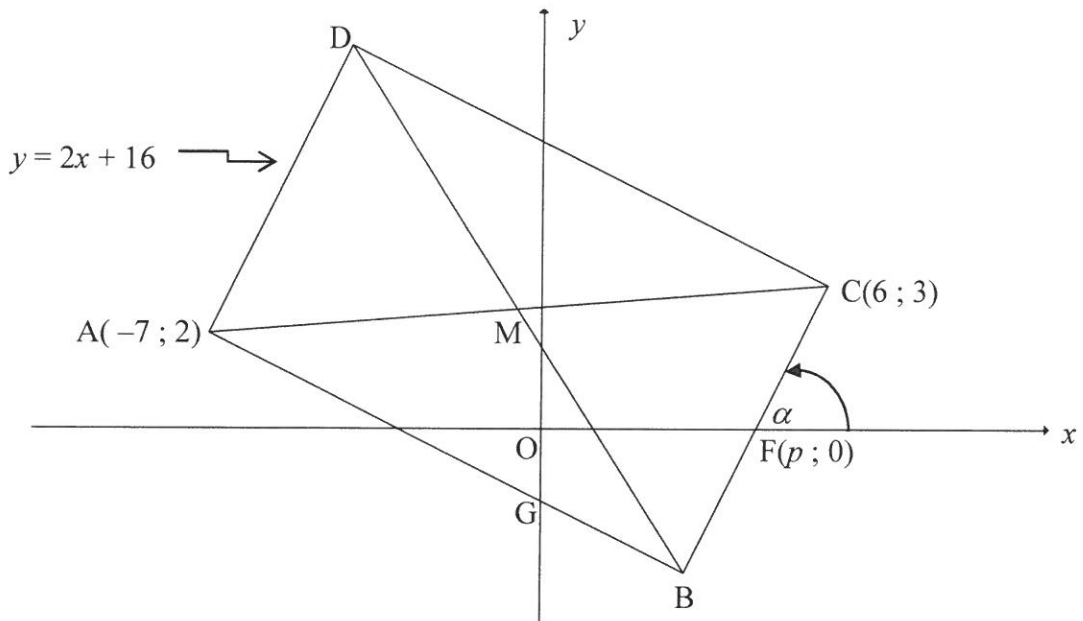
	Solution/*Oplossing*	Marks *Punte*
3.1		(2)
3.2		(1)
3.3		(3)

	Solution/*Oplossing*	Marks *Punte*
3.4		(3)
3.5		(2)
3.6		(3)
3.7		(3)
3.8		(2)
		[19]

QUESTION/*VRAAG* 4

	Solution/*Oplossing*	Marks *Punte*
4.1		(1)
4.2		(2)

	Solution/*Oplossing*	Marks *Punte*
4.3		(3)
4.4.1		(2)
4.4.2		(3)
4.4.3		(3)

	Solution/*Oplossing*	Marks *Punte*
4.4.4		(3)
4.4.5		(6)
		[23]

QUESTION/*VRAAG* 5

	Solution/*Oplossing*	Marks *Punte*
5.1.1		(2)
5.1.2		(2)
5.2		(3)
5.3		(5)

	Solution/*Oplossing*	Marks *Punte*
5.4.1		(3)
5.4.2		(2)
5.4.3		(4)
		[21]

QUESTION/*VRAAG* 6

	Solution/*Oplossing*	Marks *Punte*
6.1		(3)
6.2		(2)
6.3		(4)

	Solution/*Oplossing*	Marks *Punte*
6.4		
		(3)
		[12]

QUESTION/*VRAAG* 7

$$\text{Volume of pyramid} = \frac{1}{3}(\text{area of base}) \times (\perp \text{height})$$

$$\text{Volume van piramide} = \frac{1}{3}(\text{oppervlakte van basis}) \times (\perp \text{hoogte})$$
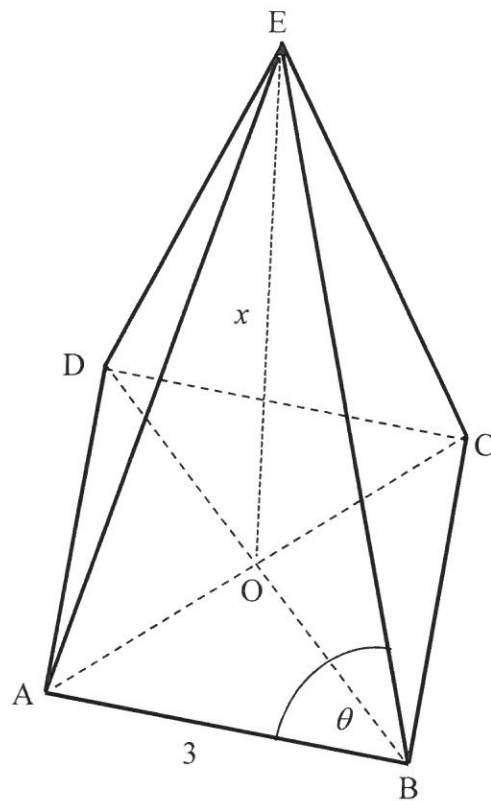
	Solution/*Oplossing*	Marks *Punte*
7.1		
		(3)

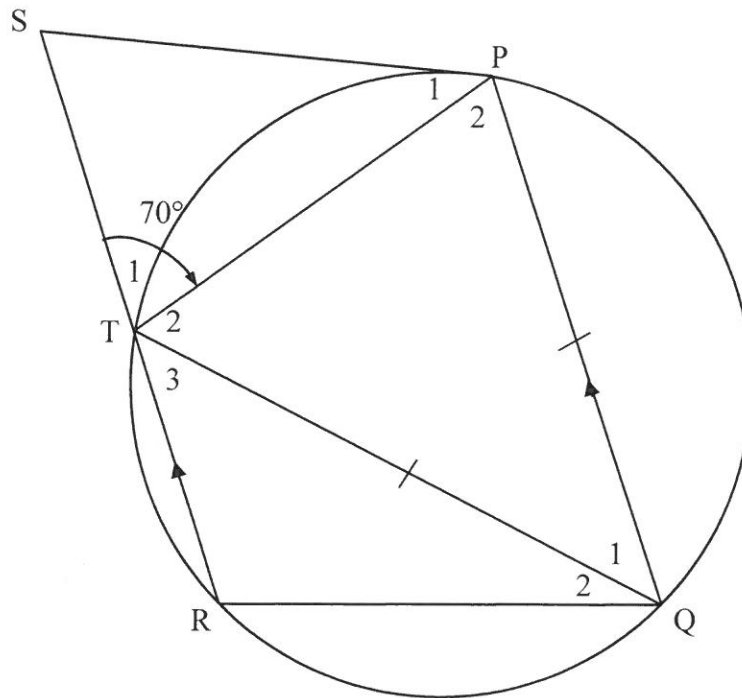|	Solution/*Oplossing*	Marks *Punte*
7.2		
		(5)

7.3

(4)

[12]

Give reasons for ALL statements and calculations in QUESTIONS 8, 9 and 10.
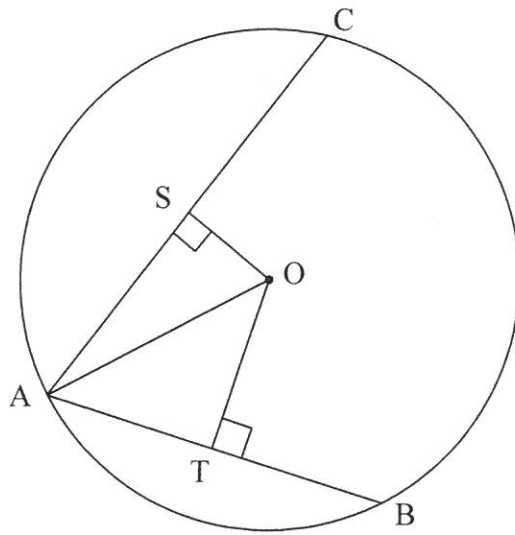**Gee redes vir ALLE bewerings en berekeninge in VRAAG 8, 9 en 10.**
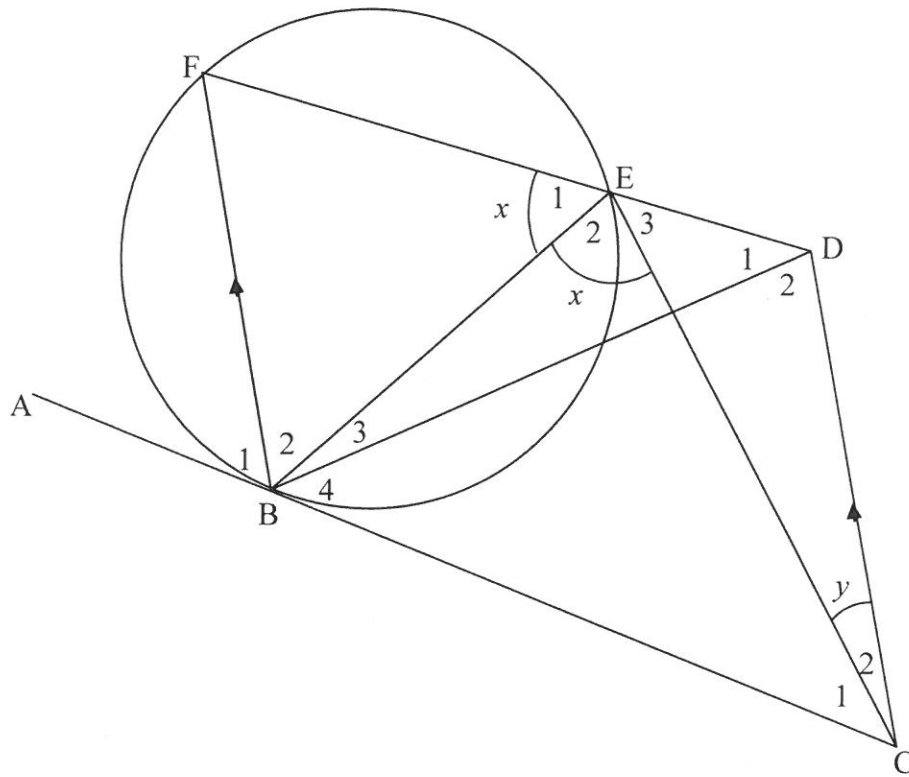
QUESTION/*VRAAG* 8

8.1

	Solution/*Oplossing*	Marks *Punte*
8.1.1		
		(1)

	Solution/*Oplossing*	Marks *Punte*
8.1.2(a)		(3)
8.1.2(b)		(2)

8.2

	Solution/*Oplossing*	Marks *Punte*
8.2.1		(1)
8.2.2		(5)
		[12]

QUESTION/*VRAAG* 9

	Solution/*Oplossing*	Marks *Punte*
9.1.1		(1)
9.1.2		(1)
9.2		(2)

	Solution/*Oplossing*	Marks *Punte*
9.3		(2)
9.4		(3)
		[9]

QUESTION/*VRAAG* 10

10.1

	Solution/*Oplossing*	Marks *Punte*
		(6)

10.2
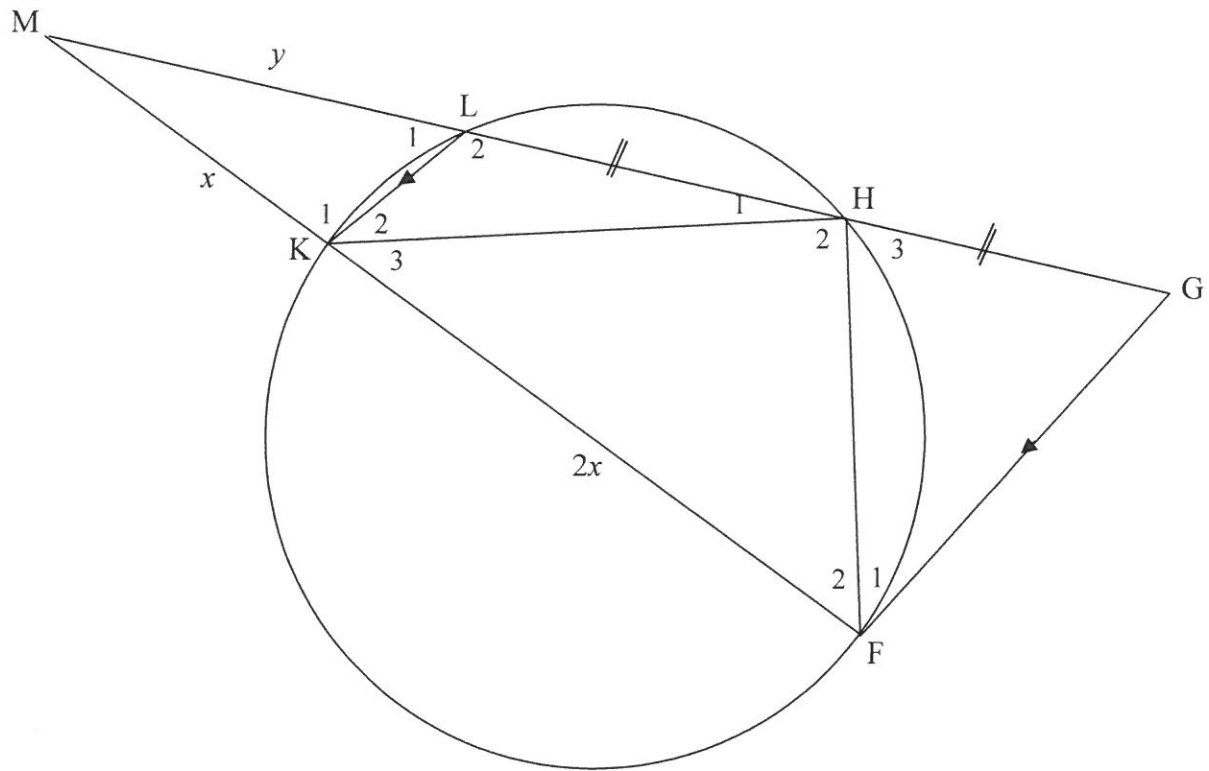
	Solution/*Oplossing*	Marks *Punte*
10.2.1		
		(1)
10.2.2(a)		
		(3)

	Solution/*Oplossing*	Marks *Punte*
10.2.2(b)		(5)
10.2.2(c)		(2)
10.2.3		(3)
		[20]

Additional space/*Bykomende ruimte*	Marks *Punte*

	Additional space/*Bykomende ruimte*	**Marks Punte**

Additional space/*Bykomende ruimte*	Marks *Punte*

TOTAL/TOTAAL: 150