

NAME OF LEARNER: <i>NAAM VAN LEERDER:</i>	
CLASS: <i>KLAS:</i>	

NATIONAL SENIOR CERTIFICATE
NASIONALE SENIOR SERTIFIKAAT

MATHEMATICS P2/WISKUNDE V2

GRADE/GRAAD 11

NOVEMBER 2016

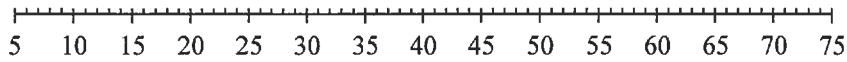
<p>SPECIAL ANSWER BOOK <i>SPESIALE ANTWOORDEBOEK</i></p>
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QUESTION <i>VRAAG</i>	MARK <i>PUNT</i>			INITIAL <i>PARAAF</i>	MODERATION <i>MODERERING</i>			INITIAL <i>PARAAF</i>
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
TOTAL <i>TOTAAL</i> (150)								

This answer book consists of 22 pages.
Hierdie antwoordeboek bestaan uit 22 bladsye.

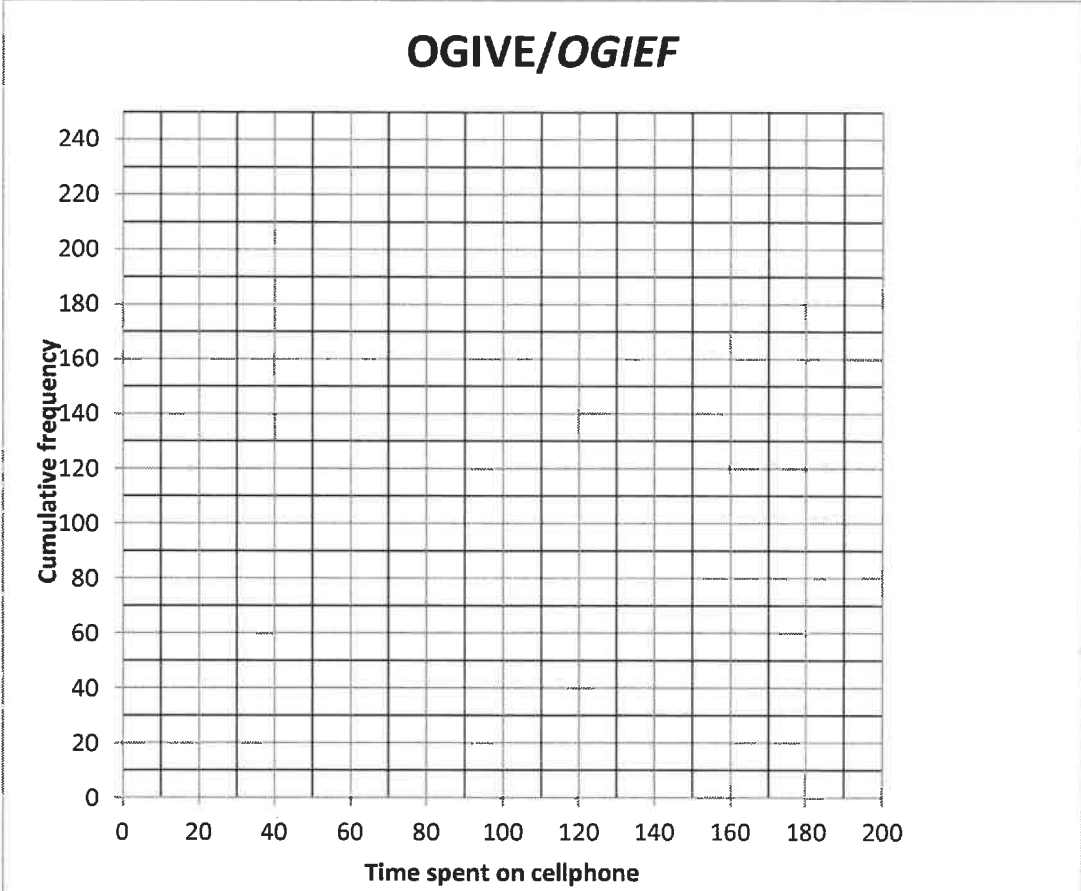
QUESTION/VRAAG 1

5	8	15	20	25	27	31	36	75
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	Solution/Oplissing	Marks Punte
1.1		(1)
1.2		(2)
1.3		(1)
1.4		(3)
1.5		(3)

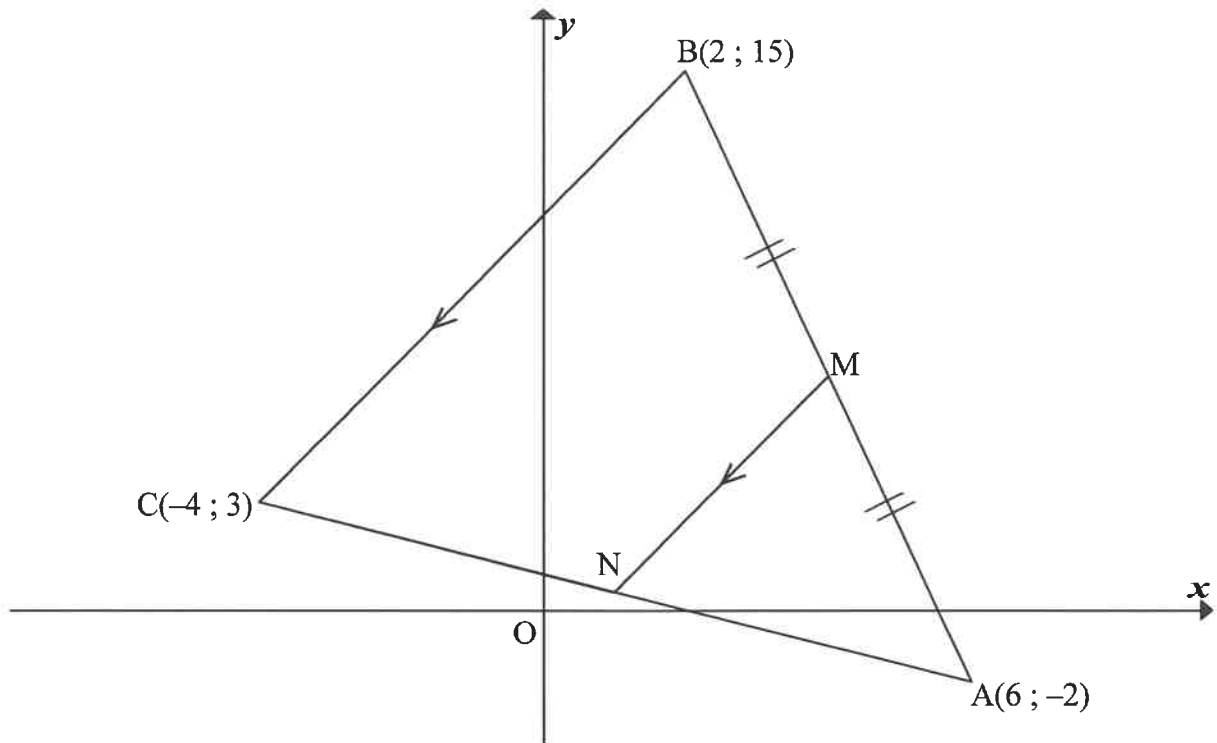
1.6		
		(1)
1.7		
		(1)
		[12]

QUESTION/VRAAG 2

	Solution/Oplissing	Marks Punte																											
2.1	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th data-bbox="408 387 715 611">TIME SPENT/ TYD SPANDEER (IN MINUTES/ MINUTE)</th> <th data-bbox="715 387 987 611">FREQUENCY/ FREKWENSIE</th> <th data-bbox="987 387 1262 611">CUMULATIVE FREQUENCY/ KUMULATIEWE FREKWENSIE</th> </tr> </thead> <tbody> <tr> <td data-bbox="408 611 715 672">$95 < x \leq 105$</td> <td data-bbox="715 611 987 672">15</td> <td data-bbox="987 611 1262 672"></td> </tr> <tr> <td data-bbox="408 672 715 732">$105 < x \leq 115$</td> <td data-bbox="715 672 987 732">27</td> <td data-bbox="987 672 1262 732"></td> </tr> <tr> <td data-bbox="408 732 715 792">$115 < x \leq 125$</td> <td data-bbox="715 732 987 792">43</td> <td data-bbox="987 732 1262 792"></td> </tr> <tr> <td data-bbox="408 792 715 853">$125 < x \leq 135$</td> <td data-bbox="715 792 987 853">52</td> <td data-bbox="987 792 1262 853"></td> </tr> <tr> <td data-bbox="408 853 715 913">$135 < x \leq 145$</td> <td data-bbox="715 853 987 913">28</td> <td data-bbox="987 853 1262 913"></td> </tr> <tr> <td data-bbox="408 913 715 974">$145 < x \leq 155$</td> <td data-bbox="715 913 987 974">21</td> <td data-bbox="987 913 1262 974"></td> </tr> <tr> <td data-bbox="408 974 715 1034">$155 < x \leq 165$</td> <td data-bbox="715 974 987 1034">10</td> <td data-bbox="987 974 1262 1034"></td> </tr> <tr> <td data-bbox="408 1034 715 1070">$165 < x \leq 175$</td> <td data-bbox="715 1034 987 1070">4</td> <td data-bbox="987 1034 1262 1070"></td> </tr> </tbody> </table>	TIME SPENT/ TYD SPANDEER (IN MINUTES/ MINUTE)	FREQUENCY/ FREKWENSIE	CUMULATIVE FREQUENCY/ KUMULATIEWE FREKWENSIE	$95 < x \leq 105$	15		$105 < x \leq 115$	27		$115 < x \leq 125$	43		$125 < x \leq 135$	52		$135 < x \leq 145$	28		$145 < x \leq 155$	21		$155 < x \leq 165$	10		$165 < x \leq 175$	4		(2)
TIME SPENT/ TYD SPANDEER (IN MINUTES/ MINUTE)	FREQUENCY/ FREKWENSIE	CUMULATIVE FREQUENCY/ KUMULATIEWE FREKWENSIE																											
$95 < x \leq 105$	15																												
$105 < x \leq 115$	27																												
$115 < x \leq 125$	43																												
$125 < x \leq 135$	52																												
$135 < x \leq 145$	28																												
$145 < x \leq 155$	21																												
$155 < x \leq 165$	10																												
$165 < x \leq 175$	4																												
2.2	<p style="text-align: center;">OGIVE/OGIEF</p> 	(3)																											

2.3		
		(2)
2.4		
		(2)
		[9]

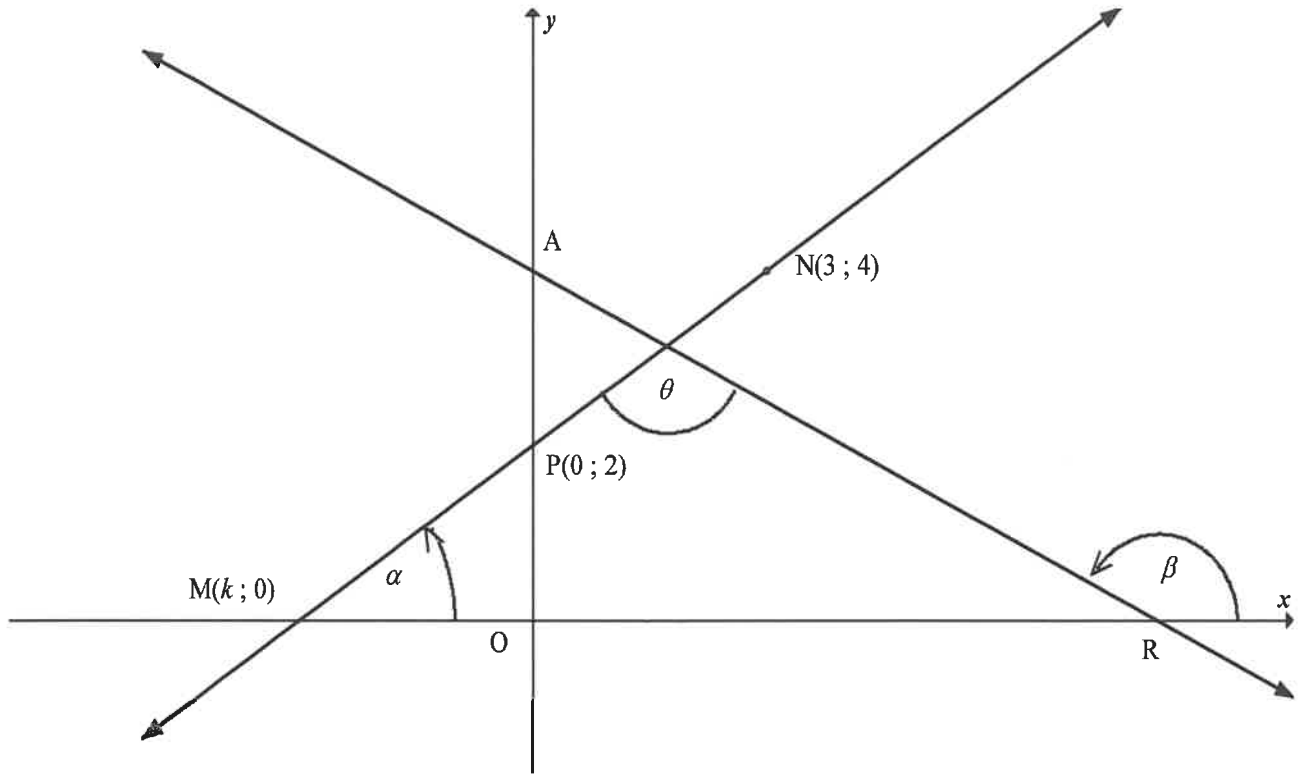
QUESTION/VRAAG 3



	Solution/Oplissing	Marks Punte
3.1		(2)
3.2		(3)

	Solution/Oplissing	Marks Punte
3.3		(2)
3.4		(4)
3.5		(4)
		[15]

QUESTION/VRAAG 4

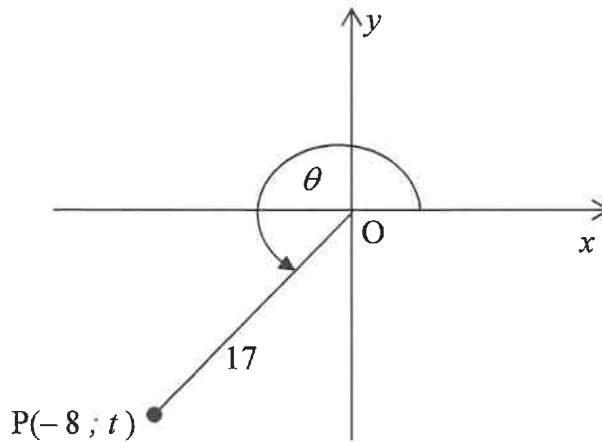


	Solution/Oplissing	Marks Punte
4.1		(3)
4.2		(4)

	Solution/Oplissing	Marks Punte
4.3		
4.4		
		(3) [13]

QUESTION/VRAAG 5

5.1

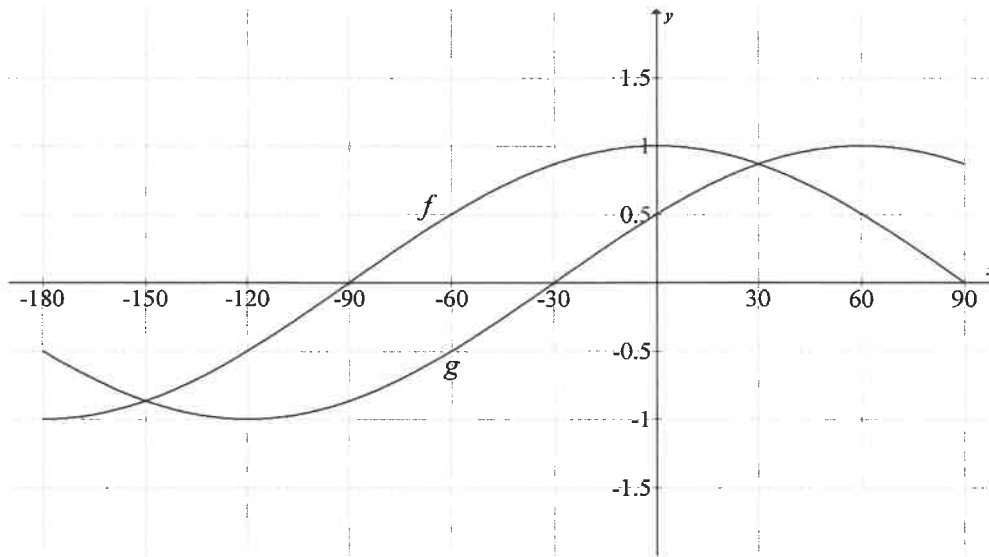


	Solution/Oplossing	Marks Punte
5.1.1		(2)
5.1.2(a)		(2)
5.1.2(b)		(2)
5.2.1		(3)

	Solution/Oplissing	Marks Punte
5.2.2		(2)
5.2.3		(4)
5.3		(6)

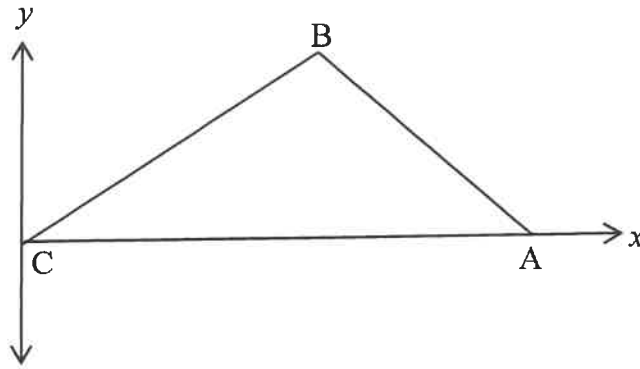
	Solution/Oplissing	Marks Punte
5.4		
5.5		
		(6) [31]

QUESTION/VRAAG 6

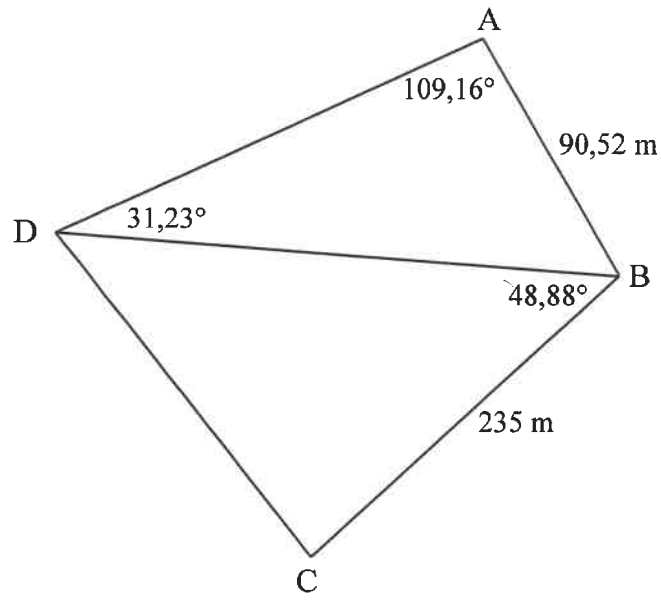


	Solution/Oplissing	Marks Punte
6.1		(1)
6.2		(1)
6.3		(2)
6.4		(3)
6.5		(2)
		[9]

QUESTION/VRAAG 7

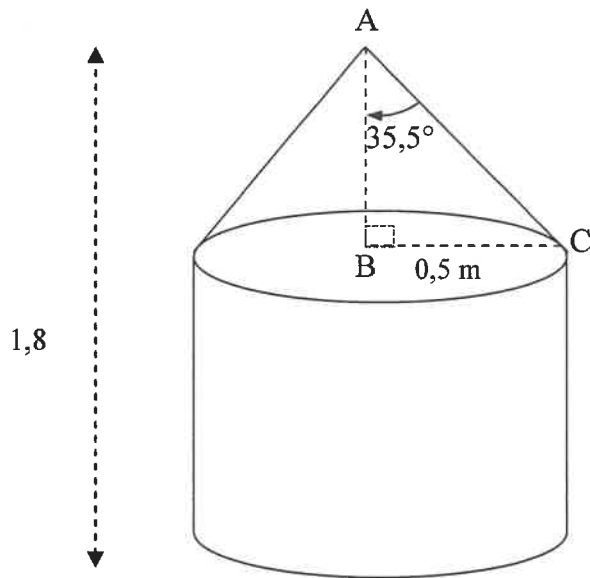


	Solution/Oplissing	Marks Punte
7.1.1		(6)
7.1.2		(4)



7.2.1		(3)
7.2.2		(3)
		[16]

QUESTION/VRAAG 8



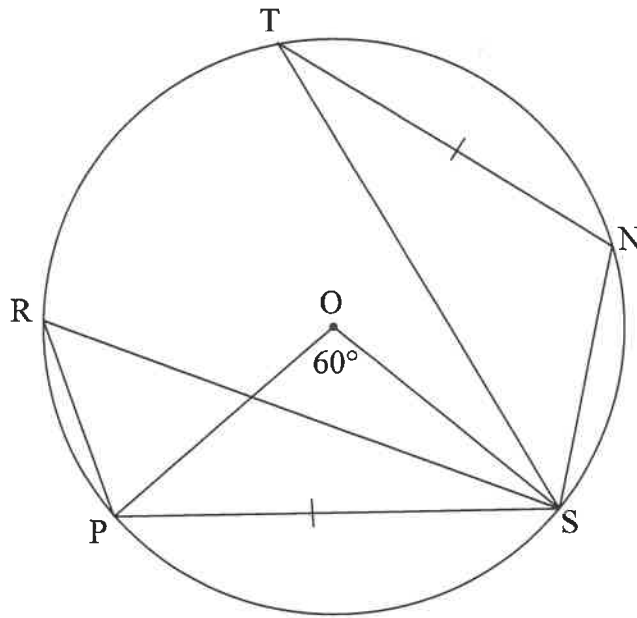
Volume of cone = $\frac{1}{3} \pi r^2 h$
 Total surface area of cone = $\pi r^2 + \pi r s$
 Volume of cylinder = $\pi r^2 h$
 Total surface area of cylinder = $2\pi r^2 + 2\pi r h$

Volume van keël = $\frac{1}{3} \pi r^2 h$
 Totale oppervlakarea van keël = $\pi r^2 + \pi r s$
 Volume van silinder = $\pi r^2 h$
 Totale oppervlakarea van silinder = $2\pi r^2 + 2\pi r h$

	Solution/Oplissing	Marks Punte
8.1		(2)
8.2		(4)
		[6]

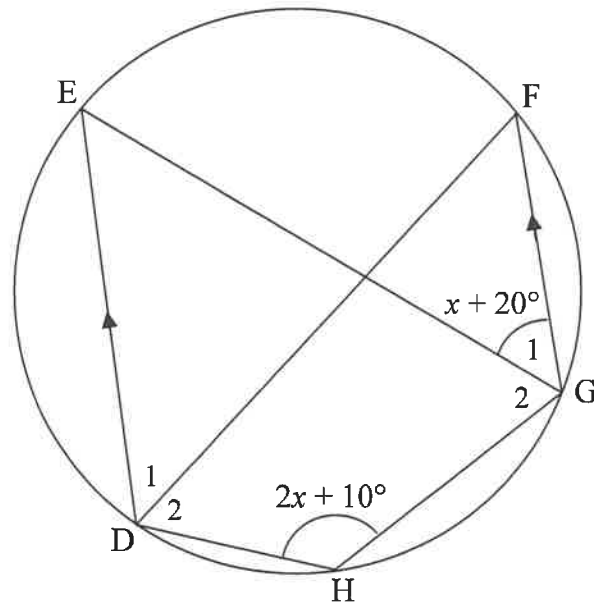
Give reasons for your statements and calculations in QUESTIONS 9, 10, 11 and 12.
 Gee redes vir jou bewerings en berekeninge in VRAAG 9, 10, 11 en 12.

QUESTION/VRAAG 9



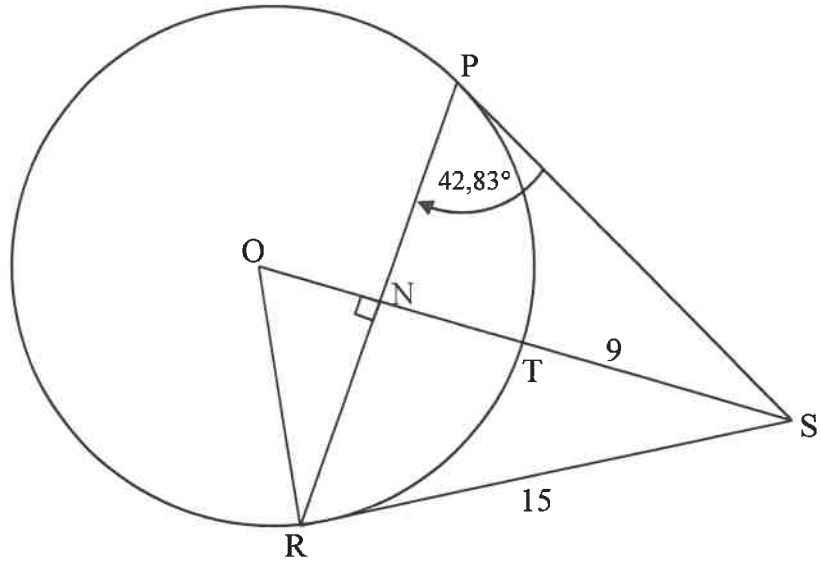
	Solution/Oplissing	Marks Punte
9.1		(2)
9.2.1		(2)
9.2.2		(2)
		[6]

QUESTION/VRAAG 10



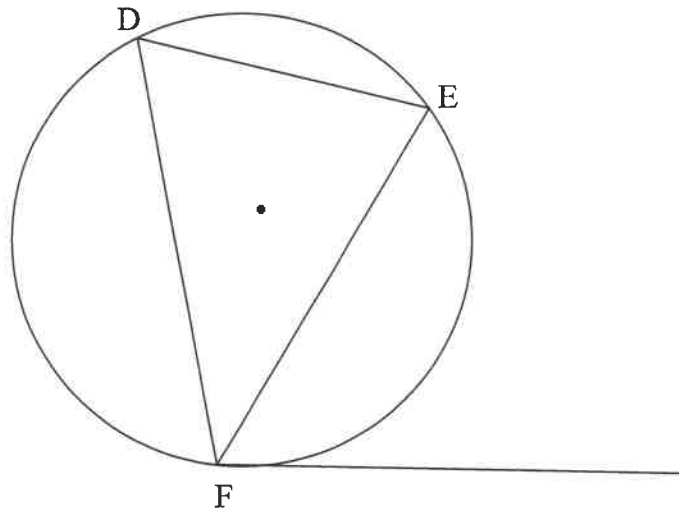
	Solution/Oplissing	Marks Punte
10.1		(2)
10.2		(4) [6]

QUESTION/VRAAG 11

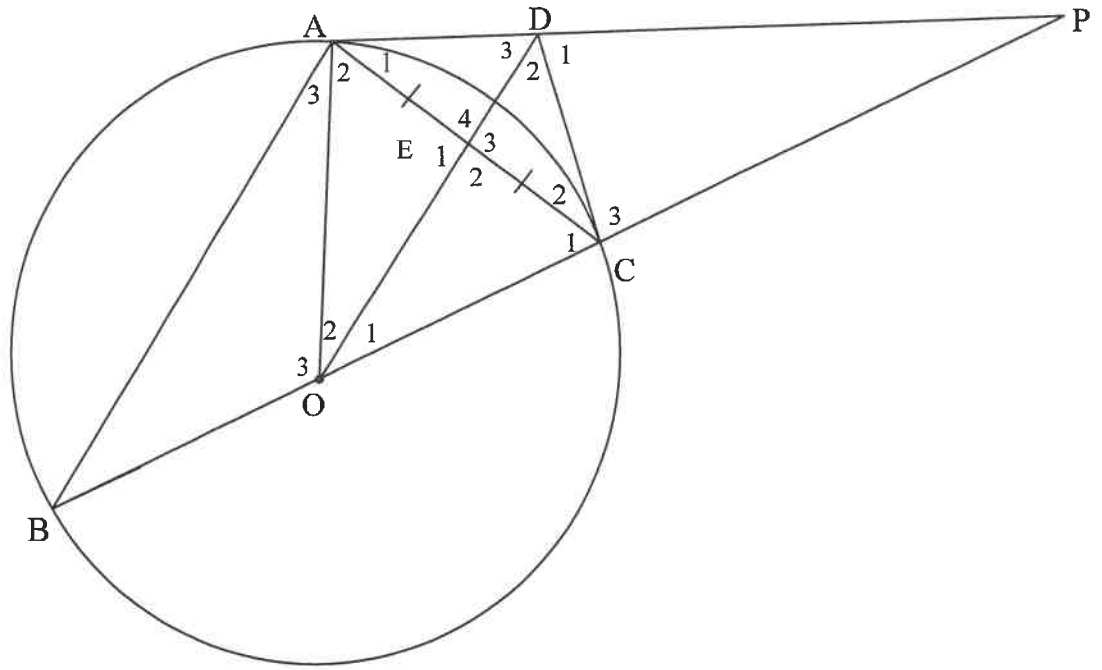


	<i>Solution/Oplissing</i>	Marks Punte
11.1		(5)
11.2		(4)
		[9]

QUESTION/VRAAG 12



	Solution/Oplissing	Marks Punte
12.1		(5)



12.2.1		
		(4)
12.2.2		
		(5)
12.2.3		
		(4)
		[18]

TOTAL/TOTAAL: 150

	Additional space/Bykomende ruimte	Marks Punte