

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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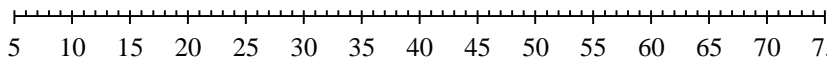
QUESTION VRAAG	MARK PUNT			INITIAL PARAAF	MODERATION MODERERING			INITIAL PARAAF
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
TOTAL TOTAAL (150)								

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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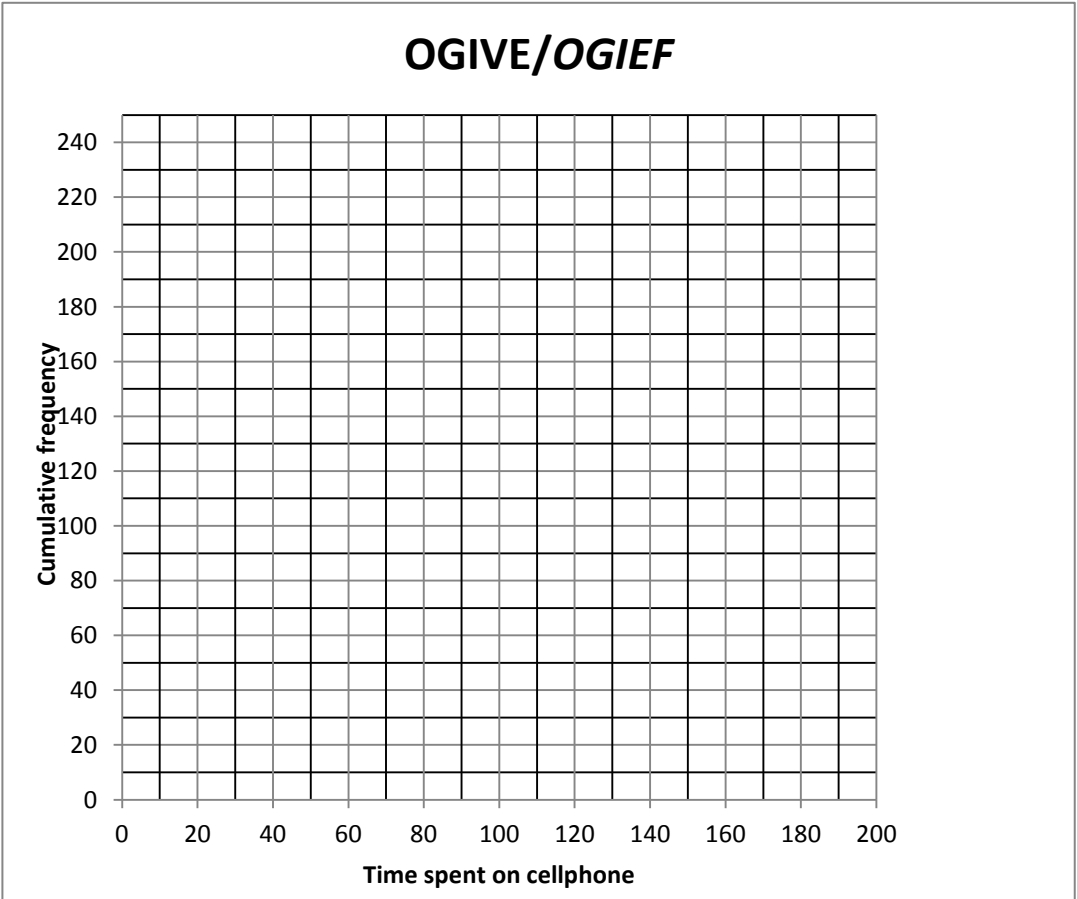
	Solution/Oplissing	Marks Punte
1.1		(1)
1.2		(2)
1.3		(1)
1.4		(3)
1.5		(3)



1.6		(1)
1.7		(1)
		[12]



QUESTION/VRAAG 2

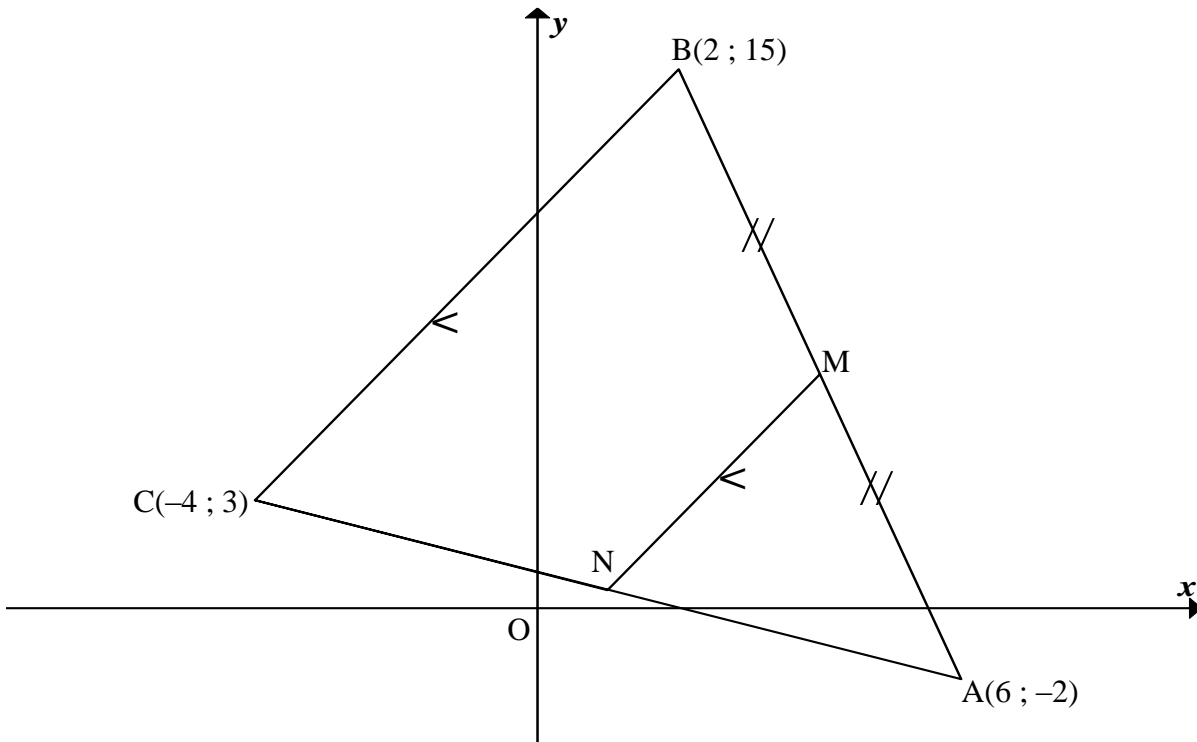
	Solution/Oplissing	Marks Punte																											
2.1	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th data-bbox="395 398 699 618">TIME SPENT/ TYD SPANDEER (IN MINUTES/ MINUTE)</th> <th data-bbox="699 398 970 618">FREQUENCY/ FREKWENSIE</th> <th data-bbox="970 398 1241 618">CUMULATIVE FREQUENCY/ KUMULATIEWE FREKWENSIE</th> </tr> </thead> <tbody> <tr> <td>$95 < x \leq 105$</td> <td>15</td> <td></td> </tr> <tr> <td>$105 < x \leq 115$</td> <td>27</td> <td></td> </tr> <tr> <td>$115 < x \leq 125$</td> <td>43</td> <td></td> </tr> <tr> <td>$125 < x \leq 135$</td> <td>52</td> <td></td> </tr> <tr> <td>$135 < x \leq 145$</td> <td>28</td> <td></td> </tr> <tr> <td>$145 < x \leq 155$</td> <td>21</td> <td></td> </tr> <tr> <td>$155 < x \leq 165$</td> <td>10</td> <td></td> </tr> <tr> <td>$165 < x \leq 175$</td> <td>4</td> <td></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																											
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$145 < x \leq 155$	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



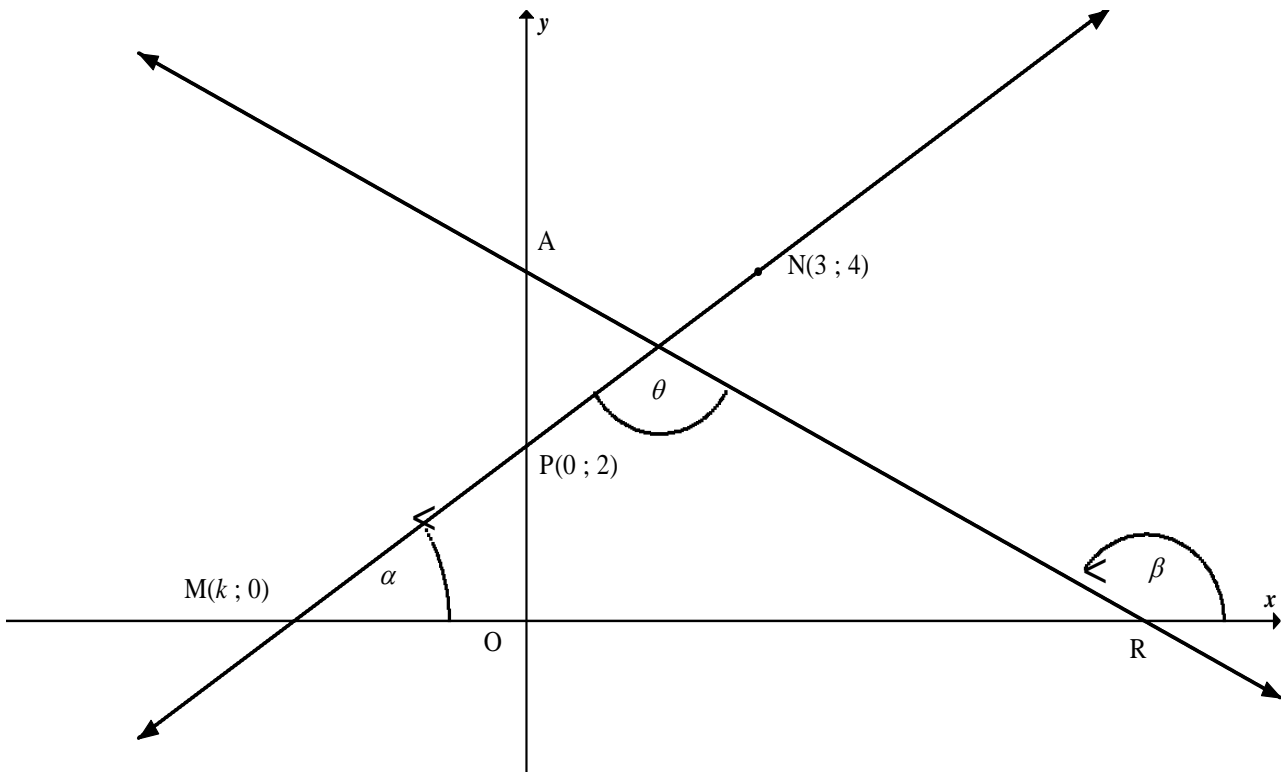
	Solution/Oplissing	Marks Punte
3.1		(2)
3.2		(3)



	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)

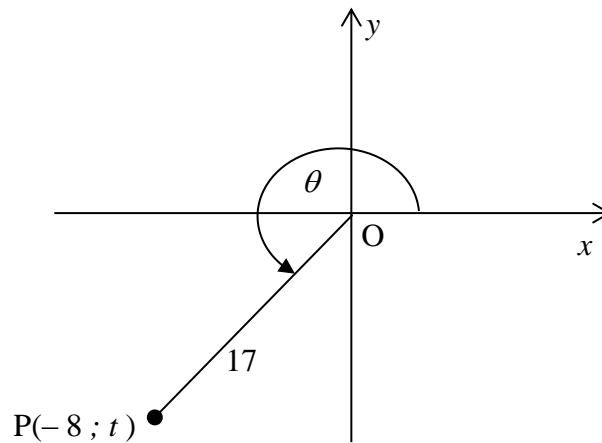


	Solution/Oplossing	Marks Punte
4.3		(3)
4.4		(3)
		[13]



QUESTION/VRAAG 5

5.1



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



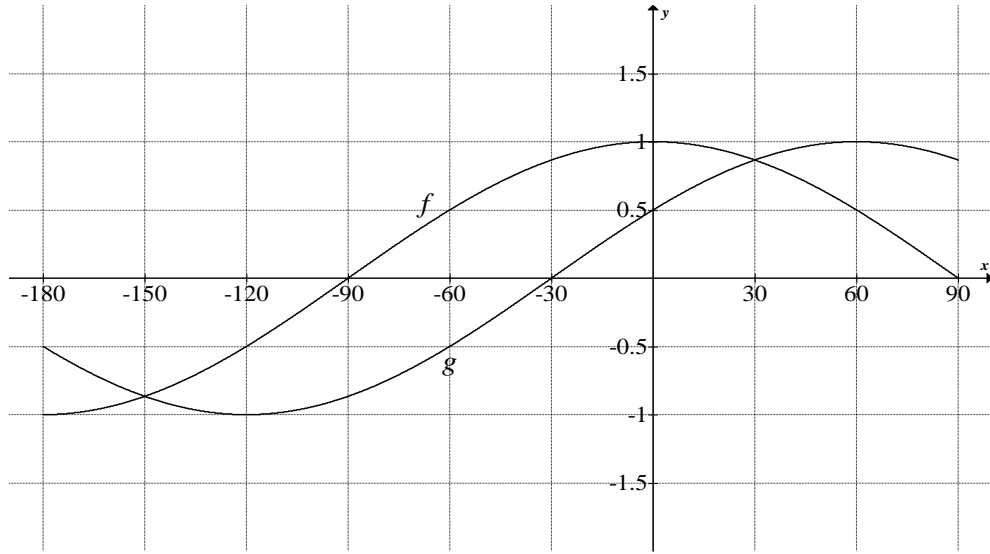
	Solution/Oplissing	Marks Punte
5.2.2		(2)
5.2.3		(4)
5.3		(6)



	Solution/Oplissing	Marks Punte
5.4		(4)
5.5		(6)
		[31]



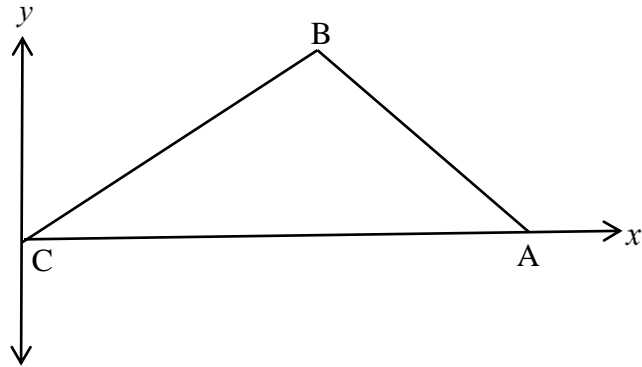
QUESTION/VRAAG 6



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

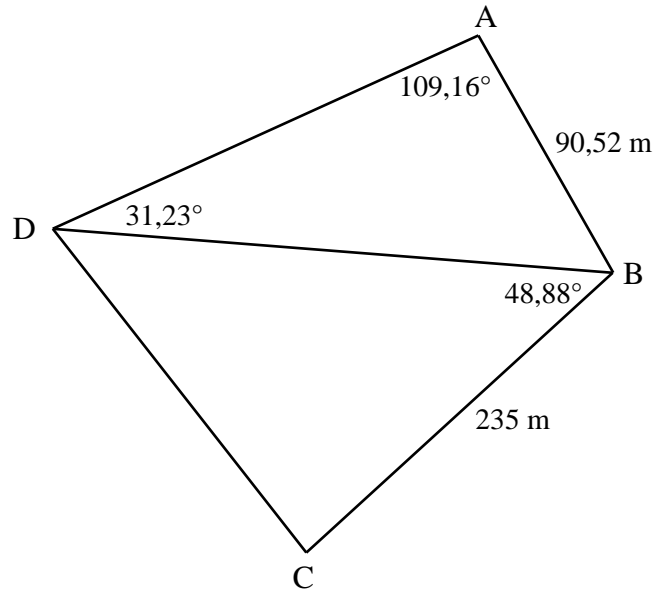


QUESTION/VRAAG 7



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

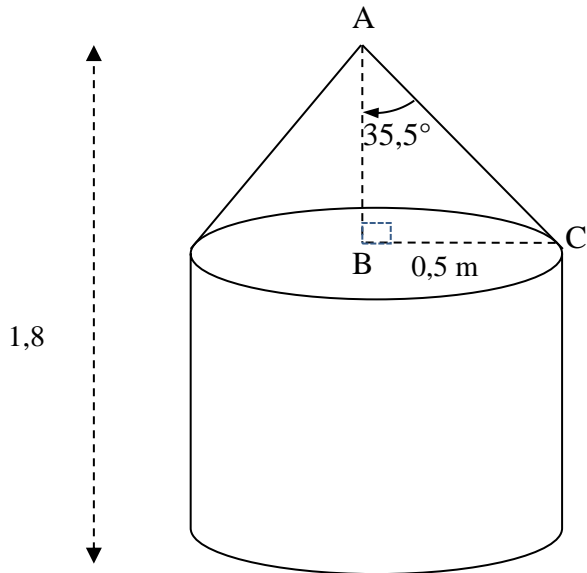




7.2.1		(3)
7.2.2		(3)
		[16]



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 = $2\pi r^2 + 2\pi r h$

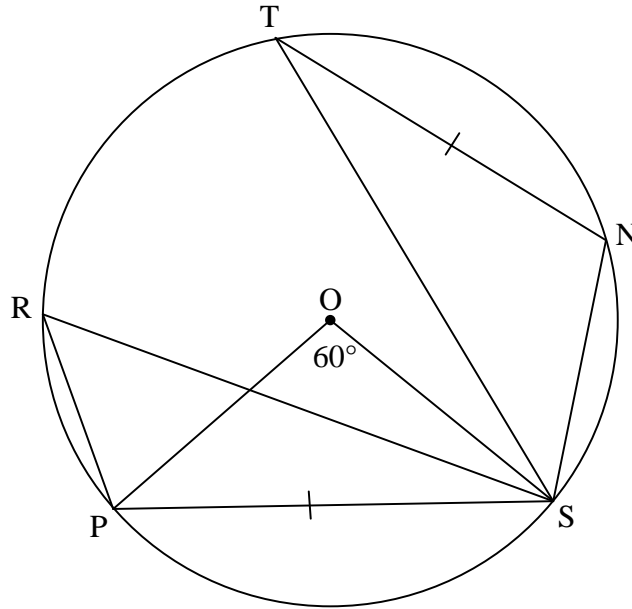
Volume van keël = $\frac{1}{3} \pi r^2 h$
 Totale oppervlakarea van keël = $\pi r^2 + \pi r s$
 Volume van silinder = $\pi r^2 h$
 Totale oppervlakarea van silinder = $2\pi r^2 + 2\pi r h$

	Solution/Oplossing	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.

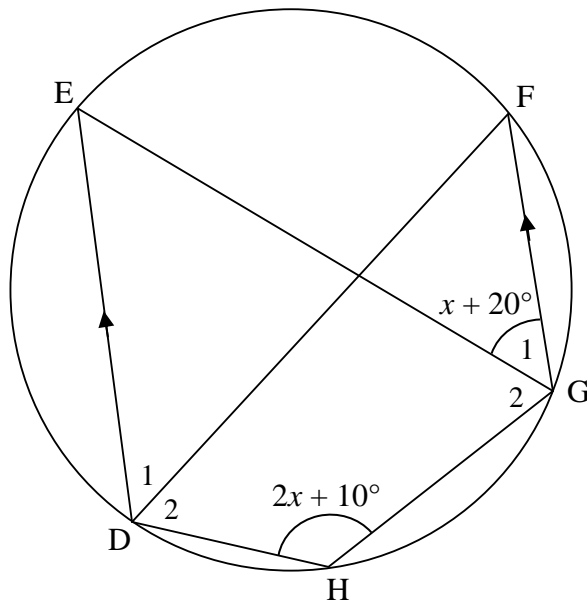
QUESTION/VRAAG 9



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



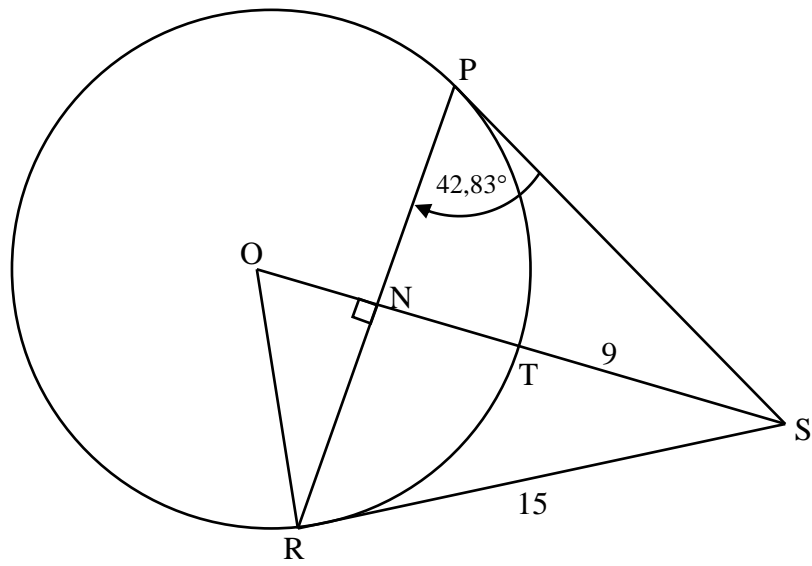
QUESTION/VRAAG 10



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



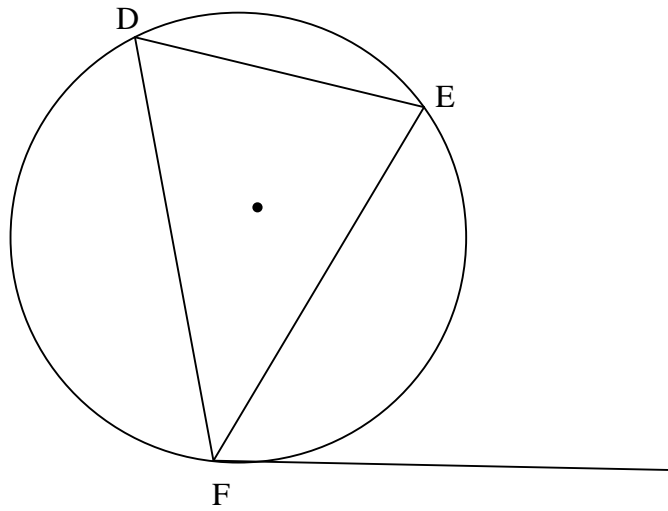
QUESTION/VRAAG 11



	Solution/Oplossing	Marks Punte
11.1		(5)
11.2		(4)
		[9]

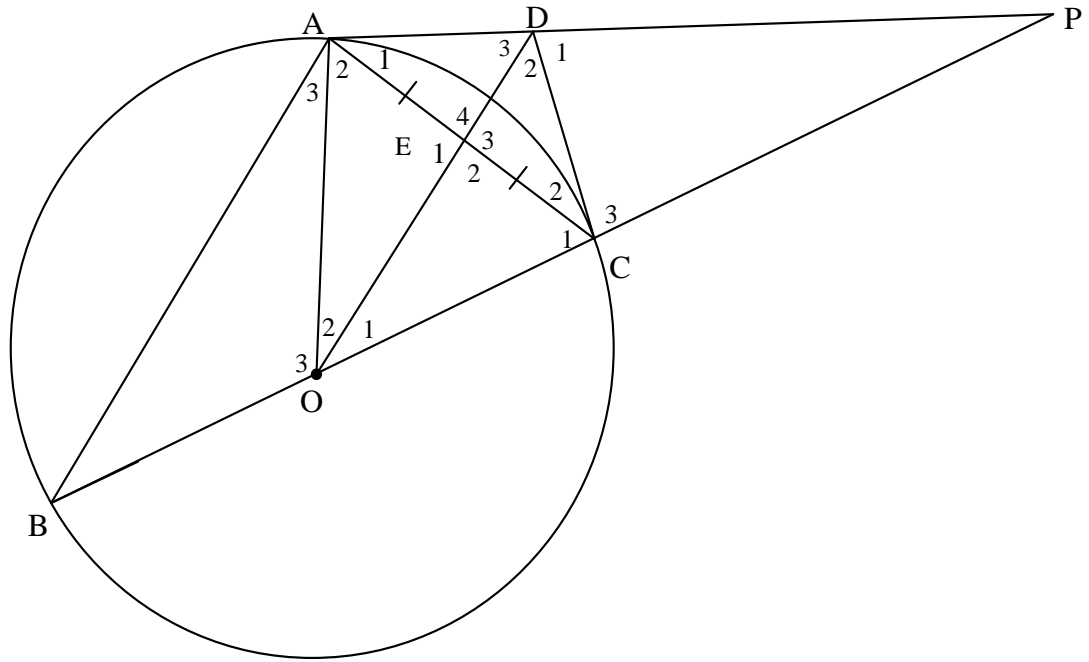


QUESTION/VRAAG 12



	Solution/Oplissing	Marks Punte
12.1		(5)





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

TOTAL/TOTAAL: 150



