



LEARNER'S NAME/

CLASS

**NATIONAL
SENIOR CERTIFICATE**

GRADE/GRAAD 12

SEPTEMBER 2022

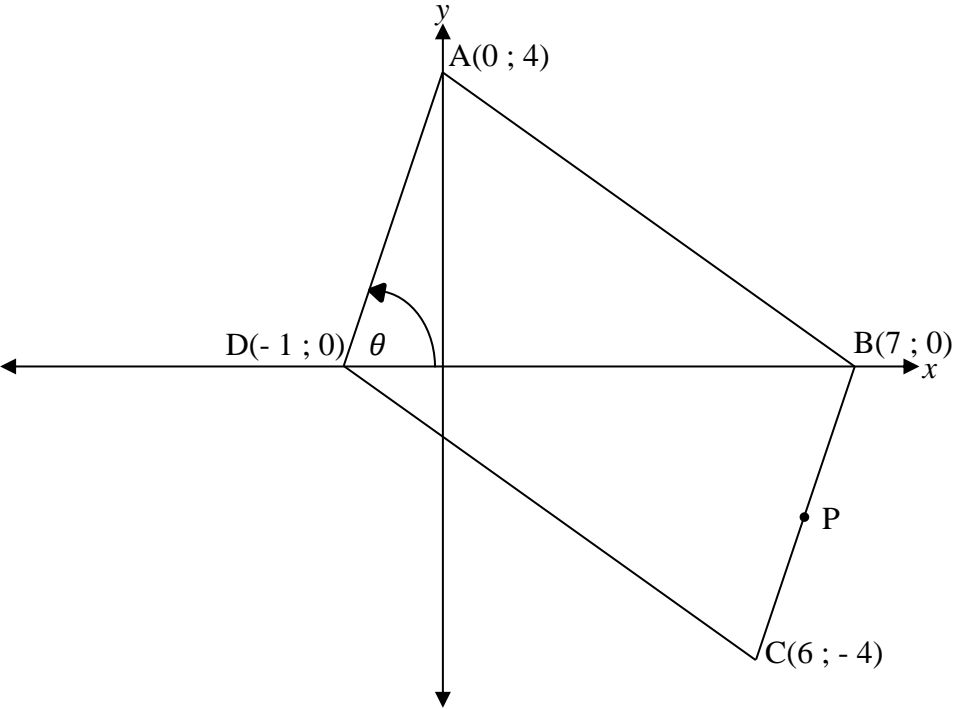
**TECHNICAL MATHEMATICS P2
SPECIAL ANSWER BOOK (DEAF)**

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												

This special answer book has 28 pages.

FOLLOW THESE INSTRUCTIONS CAREFULLY	VOLG HIERDIE INSTRUKSIES NOUKEURIG
<p>1. Answer ALL questions.</p> <p>2. No pages may be torn from this answer book.</p> <p>3. Answers must be written in black/blue ink. Do not write in the margins.</p> <p>4. Indicate^(show) 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.</p> <p>5. Draw a through any work/rough work that must not be marked.</p> <p>6. In the event that you use the additional space provided^(given):</p> <p>6.1 Write down the number of the question</p> <p>6.2 Leave a line and rule off after your answer.</p>	<p>1. <i>Beantwoord ALLE vrae in die ruimtes wat voorsien is.</i></p> <p>2. <i>Geen bladsye mag uit hierdie antwoordeboek geskeur word nie.</i></p> <p>3. <i>Skryf die antwoorde so duidelik moontlik met swart/blou ink. Moenie in die kantlyn skryf nie.</i></p> <p>4. <i>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.</i></p> <p>5. <i>Trek 'n netjiese lyn deur enige werk/rofwerk wat nie nagesien moet word nie.</i></p> <p>6. <i>Ingeval jy die bykomende ruimte wat voorsien word, gebruik:</i></p> <p>6.1 <i>Skryf die nommer van die vraag neer.</i></p> <p>6.2 <i>Laat 'n lyn oop en trek 'n lyn na jou antwoord.</i></p>

QUESTION 1

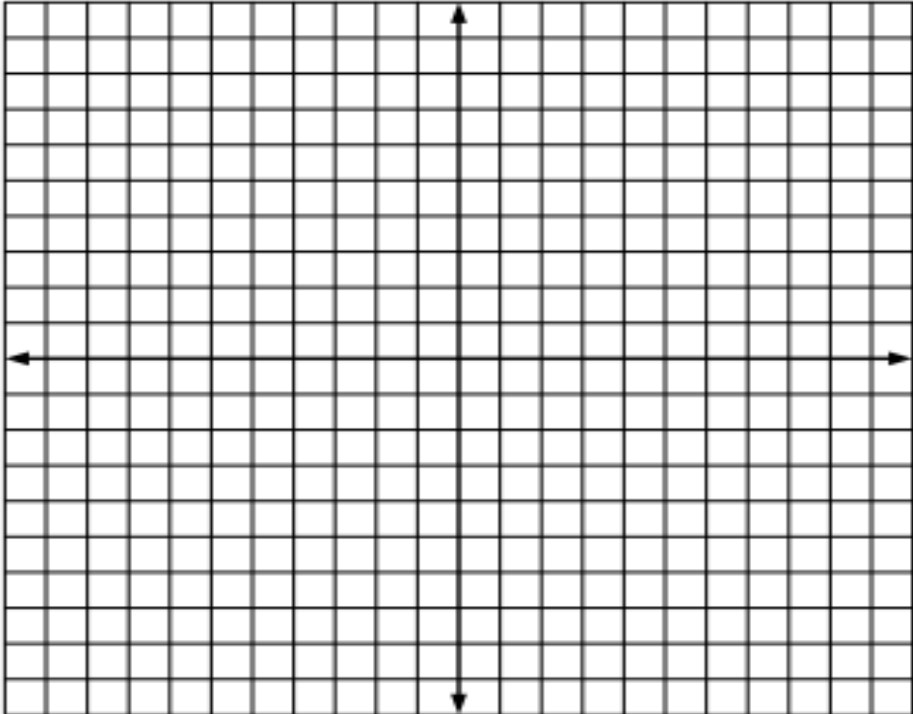
	Solution	Marks
		
1.1	<div></div> <div></div> <div></div> <div></div> <div></div>	(2)
1.2	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(3)

1.3		(2)
1.4		(2)
1.5		(3)
		[12]

QUESTION 2

	Solution	Marks
2.1.1	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(3)

	Solution	Marks
2.1.2		(2)
2.1.3		(2)

	Solution	Marks
2.2.1		
		
		(3)
2.2.2		(1)
		[11]

QUESTION 3

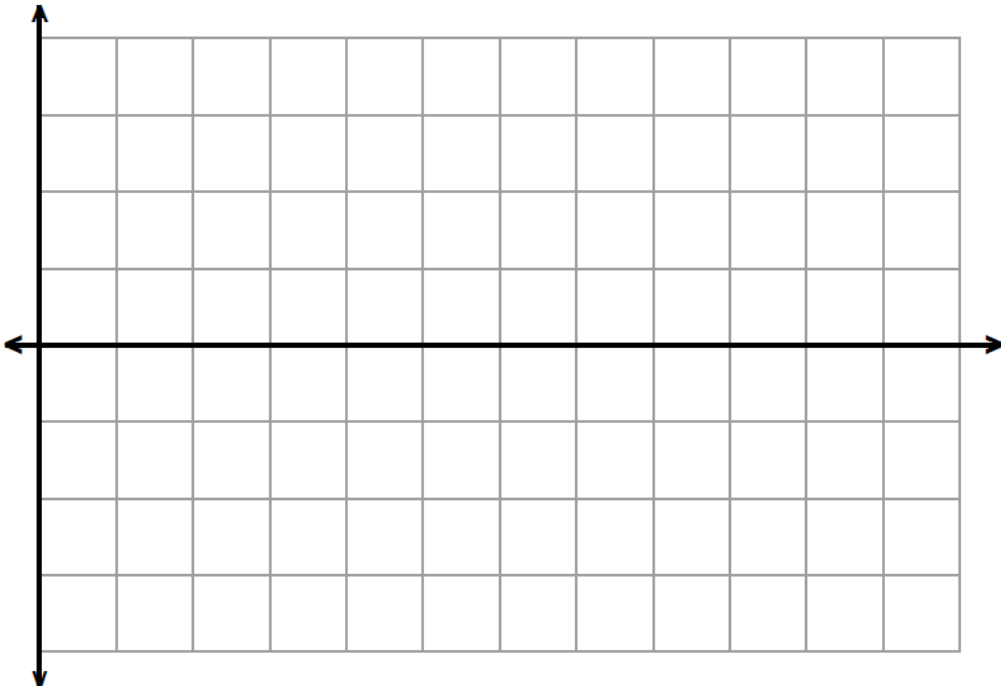
	Solution	Marks
3.1.1		(2)
3.1.2		(3)
3.2.1		(3)
3.2.2		(1)

3.2.3		(3)
3.3		(4)
		[16]

QUESTION 4

	Solution	Marks
4.1		(1)
4.2	$\frac{\cos(180^\circ + \theta) \cdot \tan(360^\circ - \theta) \cdot \cos^2(360^\circ - \theta)}{\sin(180^\circ - \theta)} + \cos^2 \theta$	(7)
4.3	$\frac{\sec \theta + \operatorname{cosec} \theta}{\sin \theta + \cos \theta} = \tan \theta + \cot \theta$	(8)
		[16]

QUESTION 5

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

QUESTION 6

	Solution	Marks
6.1		(2)
6.2		(3)
		[5]

QUESTION 7

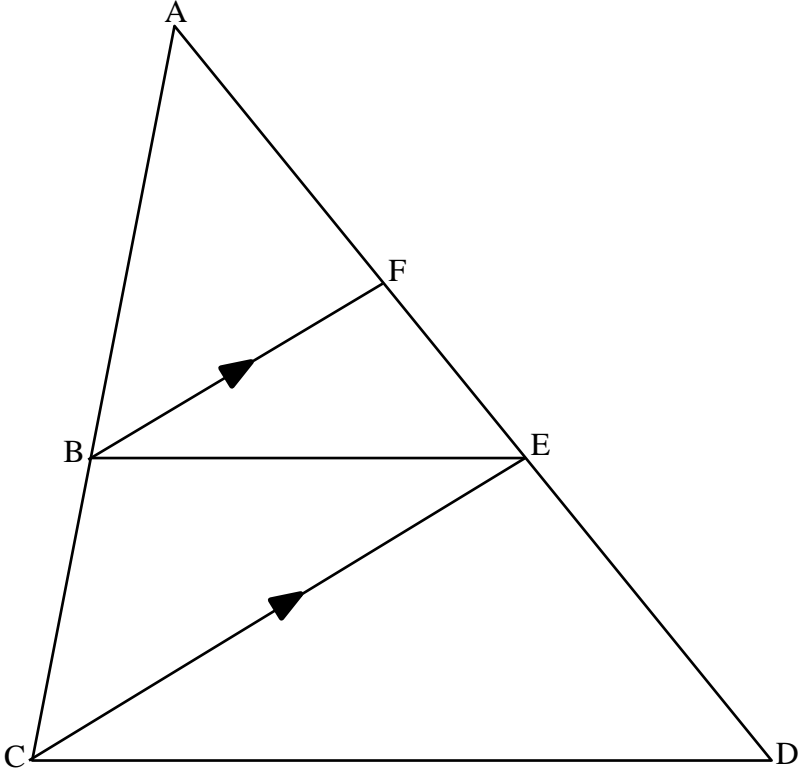
	Solution	Marks
7.1		(1)
7.2		
7.2.1		(2)
7.2.2		(2)
7.2.3		(2)
		[7]

QUESTION 8

	Solution	Marks
8.1		(1)
8.2		
8.2.1		(1)
8.2.2		(4)
8.2.3(a)		(2)

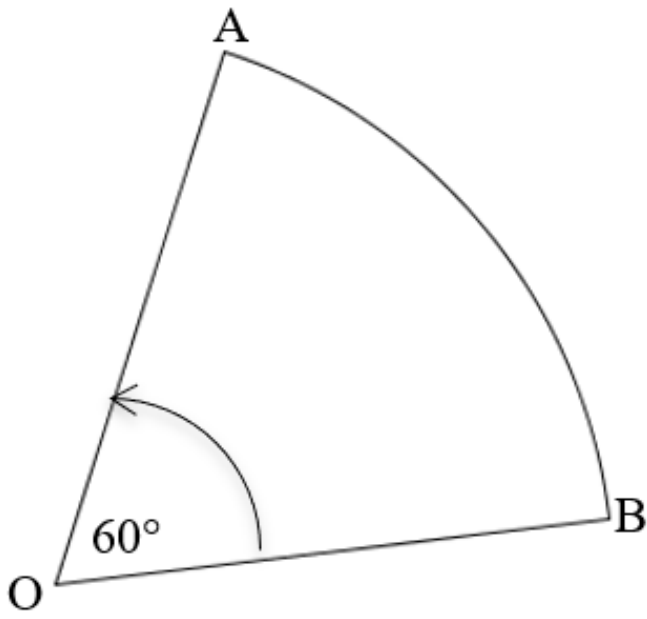
8.2.3(b)		(2)
8.2.3(c)		(2)
8.2.3(d)		(2)
		[14]


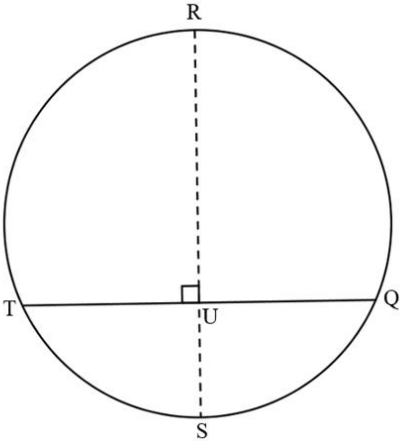
QUESTION 9

	Solution	Marks
9.1		(1)
9.2		
9.2.1	<div></div> <div></div> <div></div> <div></div> <div></div>	(3)
9.2.2	<div></div> <div></div> <div></div> <div></div> <div></div>	(3)
9.3		(1)

	Solution	Marks
9.4.2(b)		(3)
9.4.2(c)		(3)
9.4.2(d)		(2)
		[23]

QUESTION 10

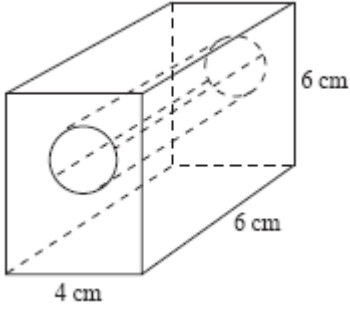
	Solution	Marks
10.1		
10.1.1	<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>	(4)
10.1.2	<div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> </div>	(3)

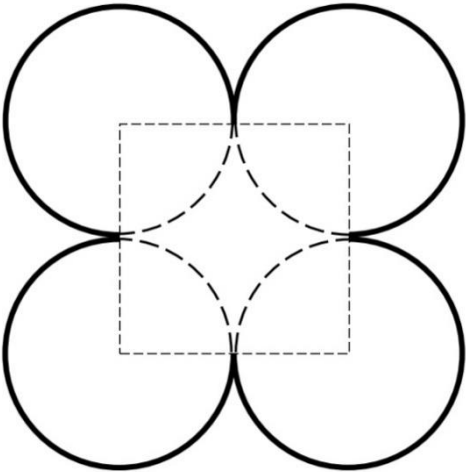
	Solution	Marks
10.2	 	
10.2.1	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(4)
10.2.2	<div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>	(4)

	Solution	Marks
10.2.3		
		(5)
		[20]

QUESTION 11

	Solution	Marks
11.1	<p>Diagram description: A cross-section of a road or embankment. The top boundary is a curve. The bottom boundary is a horizontal line. The total width of the bottom boundary is 16 m. The left vertical height is 6,2. The right vertical height is 2 m. A vertical line segment of height x m is drawn from the bottom boundary to the curve. Another vertical line segment of height 5,1 is drawn from the bottom boundary to the curve. A third vertical line segment of height 4,9 is drawn from the bottom boundary to the curve.</p>	
		(5)

	Solution	Marks
11.2		
		(4)

	Solution	Marks
11.3		
		(5)
		[14]
	TOTAL:	150

	Additional Space	Marks

	Additional Space	Marks

	Additional Space	Marks

	Additional Space	Marks