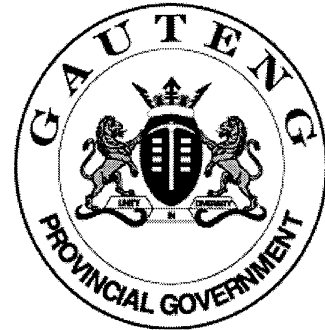


**SENIOR CERTIFICATE  
EXAMINATION  
*SENIORSERTIFIKAAT-EKSAMEN***



**FEBRUARY / MARCH  
*FEBRUARIE / MAART***

**2006**

**TECHNICAL DRAWING  
*TEGNIесе TEKENE***

**First Paper : Descriptive Geometry and  
Locus  
*Eerste Vraestel : Beskrywende  
Meetkunde en Lokus***

**SG**

**711-2/1**

TECHNICAL DRAWING/TEGNIесе TEKENE SG  
Paper 1/Vraestel 1

**8 pages/bladsye**



**X05**



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GAUTENG DEPARTMENT OF  
 EDUCATION  
 SENIOR CERTIFICATE EXAMINATION

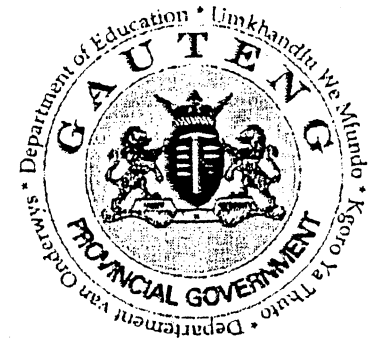
GAUTENGSE DEPARTEMENT VAN  
 ONDERWYS  
 SENIORSERTIFIKAAT-EKSAMEN

TECHNICAL DRAWING SG  
 (First Paper: Descriptive Geometry and Locus)

TEGNIесе TEKENE SG  
 (Eerste Vraestel: Beskrywende Meetkunde en  
 Lokus)

TIME: 3 hours  
 MARKS: 150

TYD: 3 uur  
 PUNTE: 150



**INSTRUCTIONS:**

**INSTRUKSIES:**

- 1) Answer **ALL** questions on ANSWER SHEETS 711-2/1(L).
- 2) Print your EXAMINATION NUMBER in the title block at the bottom of each sheet.
- 3) Use a scale of 1:1 for all questions.
- 4) All construction and projection lines must be shown.
- 5) Tabulate your answers where applicable.
- 6) Staple all answer sheets together in numerical order.
- 7) Neatness and clear presentations will count in your favour.
- 8) Do not use coloured pens or pencils.
- 9) All questions are compulsory.

- 1) Beantwoord **ALLE** vrae op die ANTWOORDVELLE 711-2/1(L).
- 2) Drukskryf jou EKSAMENNOMMER in die titelblok onderaan elke antwoordvel.
- 3) Gebruik 'n skaal van 1:1 vir alle antwoorde.
- 4) Toon alle konstruksie- en projeksielyne.
- 5) Tabuleer jou antwoorde waar nodig.
- 6) Kram alle antwoordvelle vas in numeriese volgorde.
- 7) Netheid en 'n duidelike aanbieding sal in jou guns tel.
- 8) Die gebruik van gekleurde lood en penne is verbode.
- 9) Alle vrae is verpligtend.

EXAMINATION NO.  
 EKSAMENNOMMER

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Vraag / Question	Totaal/Total		
1	<b>21</b>		
2	<b>17</b>		
3	<b>31</b>		
4	<b>16</b>		
5	<b>30</b>		
6	<b>35</b>		
Totaal / Total	<b>150</b>		

**QUESTION 1**

**Figure 1.1** shows the top view and point **B** of line segment **AB**. The true length of the line segment is 79 mm. Make use of the given information and determine the following:

- 1.1 The true angle of the line segment with the horizontal plane
- 1.2 The completed front view.

7  
2

**Figure 1.2** shows the front view and top view of line segment **CD** and point **P**. Determine the shortest distance between line segment **CD** and point **P**.

12

Total

**21**

**VRAAG 1**

**Figuur 1.1** toon die boaansig en punt **B** van lynstuk **AB**. Die ware lengte van die lynstuk is 79 mm. Maak gebruik van die gegewe inligting en bepaal die volgende:

- 1.1 Die ware hoek van die lynstuk met die horisontale vlak.
- 1.2 Die voltooide vooraansig.

7  
2

**Figuur 1.2** toon die vooraansig en boaansig van lynstuk **CD** en punt **P**. Bepaal die kortste afstand tussen lynstuk **CD** en punt **P**.

12

Totaal

**21**

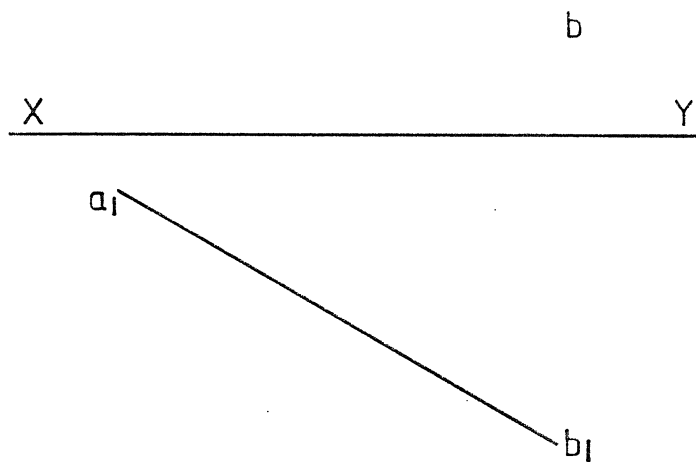


FIG.11

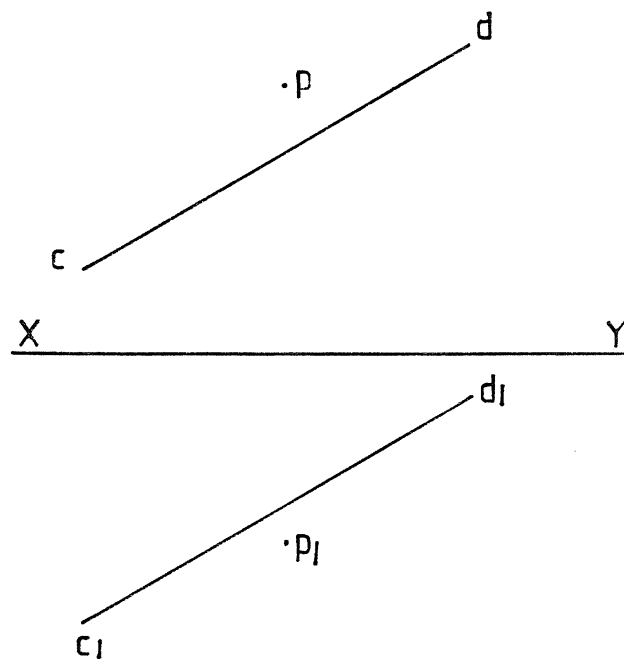


FIG.12

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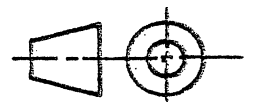
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QUESTION 1  
VRAAG 1

ANSWER SHEET 1  
ANTWOORDVEL 1



**QUESTION 2**

**Figure 2** shows the front view and top view of plane figure **ABC**. Determine:

- 2.1 The true angle between sides **AB** and **BC**. 15
- 2.2 The true lengths of the sides **AB** and **BC**. 2

Total 17

**VRAAG 2**

**Figuur 2** toon die vooraansig en booaansig van vlakfiguur **ABC**. Bepaal:

- 2.1 Die ware hoek tussen sye **AB** en **BC**. 15
- 2.2 Die ware lengtes van die sye **AB** en **BC**. 2

Totaal 17

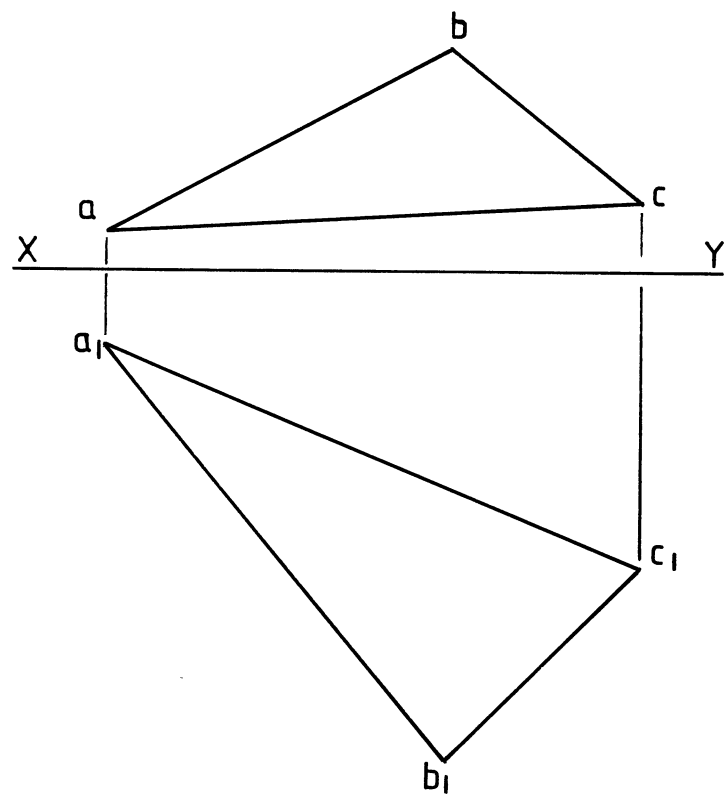


FIG. 2

EXAMINATION NO.  
EKSAMENNOMMER

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QUESTION 2  
VRAAG 2

ANSWER SHEET 2  
ANTWOORDVEL 2



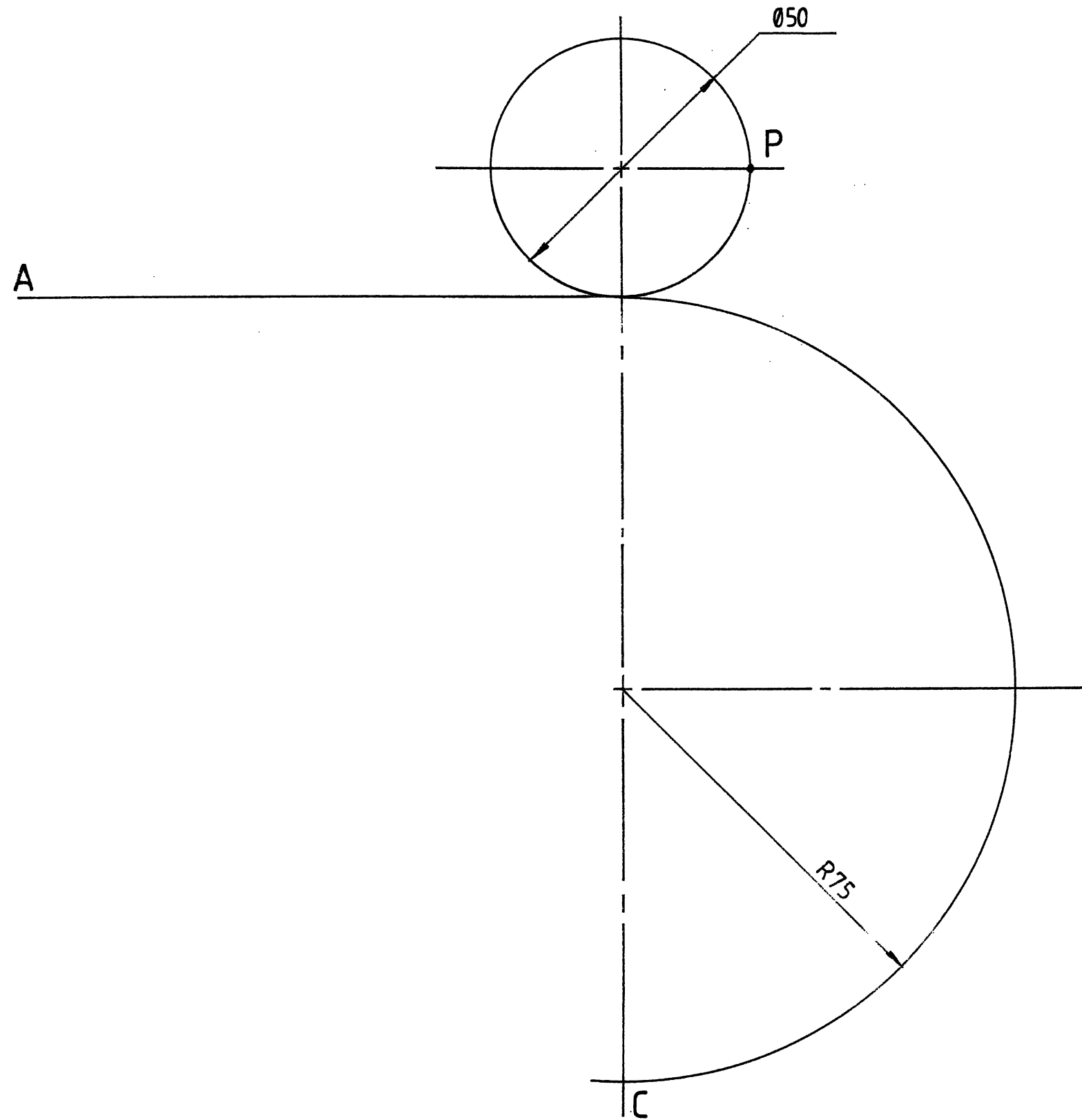


FIG. 3

**QUESTION 3**

Figure 3 shows a disc as well as the contour on which it rolls. Determine:

- 3.1 The locus of point P if the disc rolls in the direction of A for half a revolution.
- 3.2 The locus of point P if the disc rolls in the direction of C for a full revolution.
- 3.3 Name the locii.  
(Show all calculations).

Total	31	
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**VRAAG 3**

Figuur 3 toon 'n skyf asook die baan waarop dit rol. Bepaal:

- 3.1 Die lokus van punt P as die skyf in die rigting van A vir 'n halwe omwenteling rol.
- 3.2 Die lokus van punt P as die skyf in die rigting van C vir 'n volle omwenteling rol.
- 3.3 Benoem die lokusse.  
(Toon alle berekenings).

Totaal	31	
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EXAMINATION NO.  
EKSAMENNOMMER

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QUESTION 3  
VRAAG 3

ANSWER SHEET 3  
ANTWOORDVEL 3



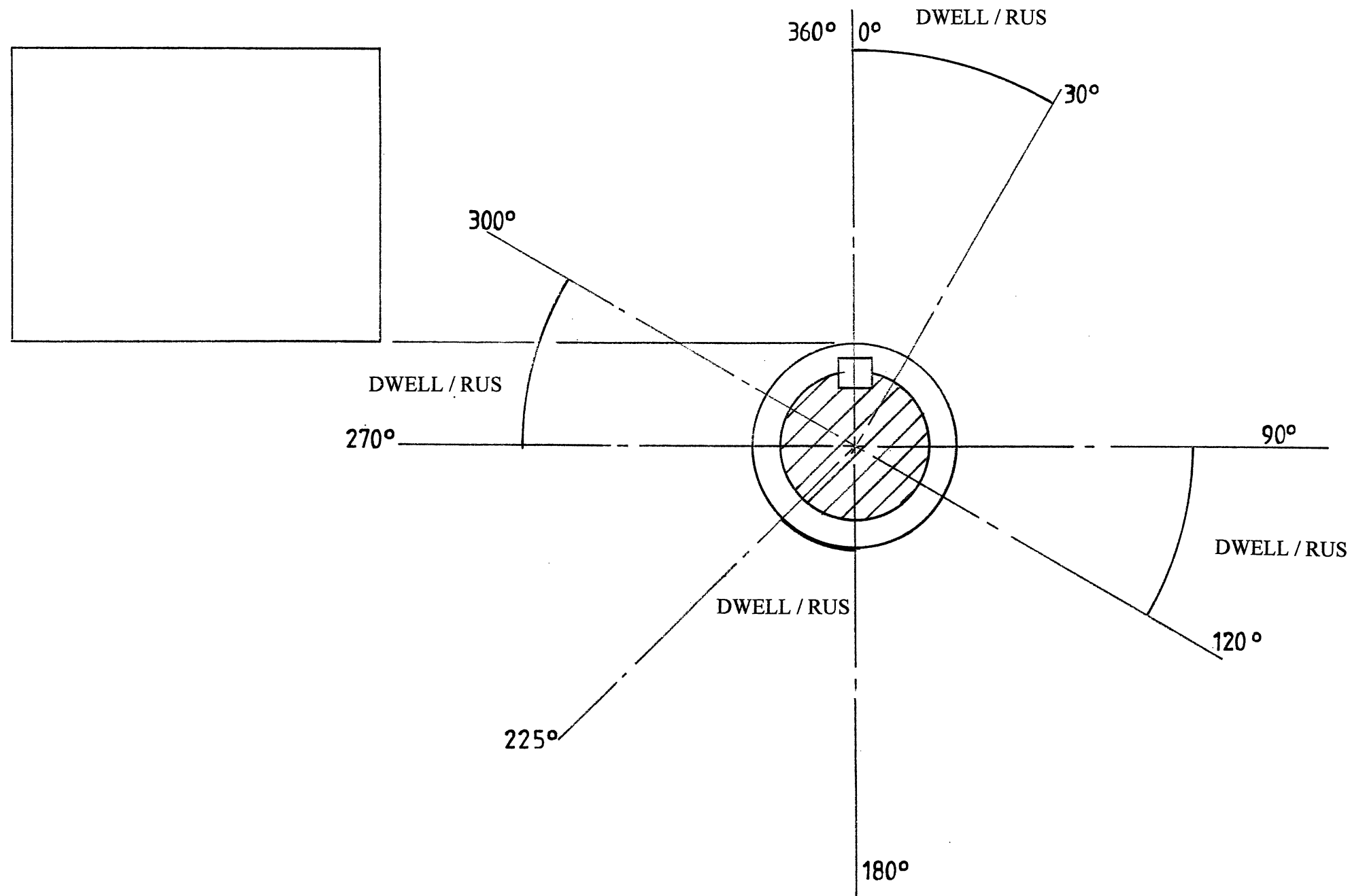


FIG. 4

**QUESTION 4**

Figure 4 shows the cam shaft, minimum cam radius and dwell periods of a wedge shaped cam follower. Make use of the given information and determine the following:

4.1 The completed displacement diagram.	10	
4.2 The completed cam profile.	5	
4.3 Indicate rotation direction by means of an arrow.	1	
<b>Total</b>	<b>16</b>	

**VRAAG 4**

Figuur 4 toon die nokas, minimum nokradius en rusperiodes van 'n wigvormige nokvolger. Maak gebruik van die gegewe inligting en bepaal die volgende:

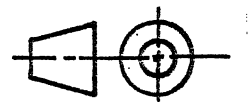
4.1 Die voltooide verplasingsdiagram	10	
4.2 Die voltooide nokprofiel	5	
4.3 Dui die draairigting met 'n pyltjie aan.	1	
<b>Totaal</b>	<b>16</b>	

EXAMINATION NO.  
EKSAMENNOMMER

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QUESTION 4  
VRAAG 4

ANSWER SHEET 4  
ANTWOORDVEL 4



**QUESTION 5**

**Figure 5** shows the incomplete front view and top view of a hexagonal prism penetrating a square pyramid.

Project:

- |  |    |
|--|----|
| 5.1 The curve of interpenetration in the front view                          | 4  |
| 5.2 The curve of interpenetration in the top view. (Show all hidden detail.) | 15 |
| 5.3 The surface development of the pyramid A.                                | 11 |

<b>Total</b>	<b>30</b>
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**VRAAG 5**

**Figuur 5** toon die onvoltooide vooraansig en booaansig van 'n seskantige prisma wat 'n vierkantige piramide deurdring.

Projekteer:

- |   |    |
|---|----|
| 5.1 Die deurdringingskromme in die vooraansig.                            | 4  |
| 5.2 Die deurdringingskromme in die booaansig. (Toon alle verborge detail) | 15 |
| 5.2 Die oppervlaksontwikkeling van die piramide A.                        | 11 |

<b>Totaal</b>	<b>30</b>
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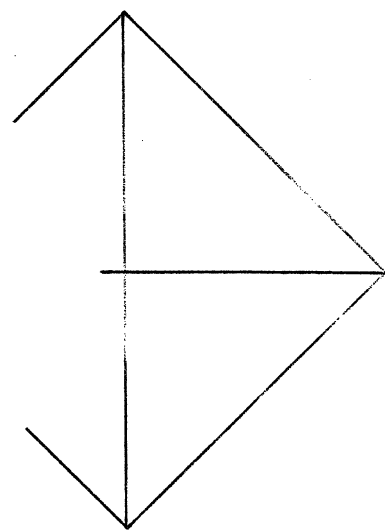
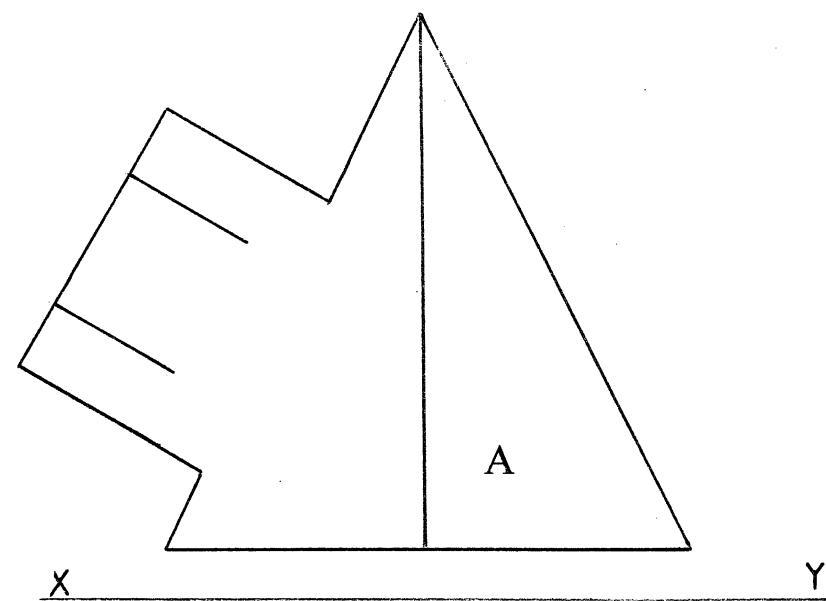


FIG. 5

EXAMINATION NO.  
EKSAMENNOMMER

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QUESTION 5  
VRAAG 5

ANSWER SHEET 5  
ANTWOORDVEL 5



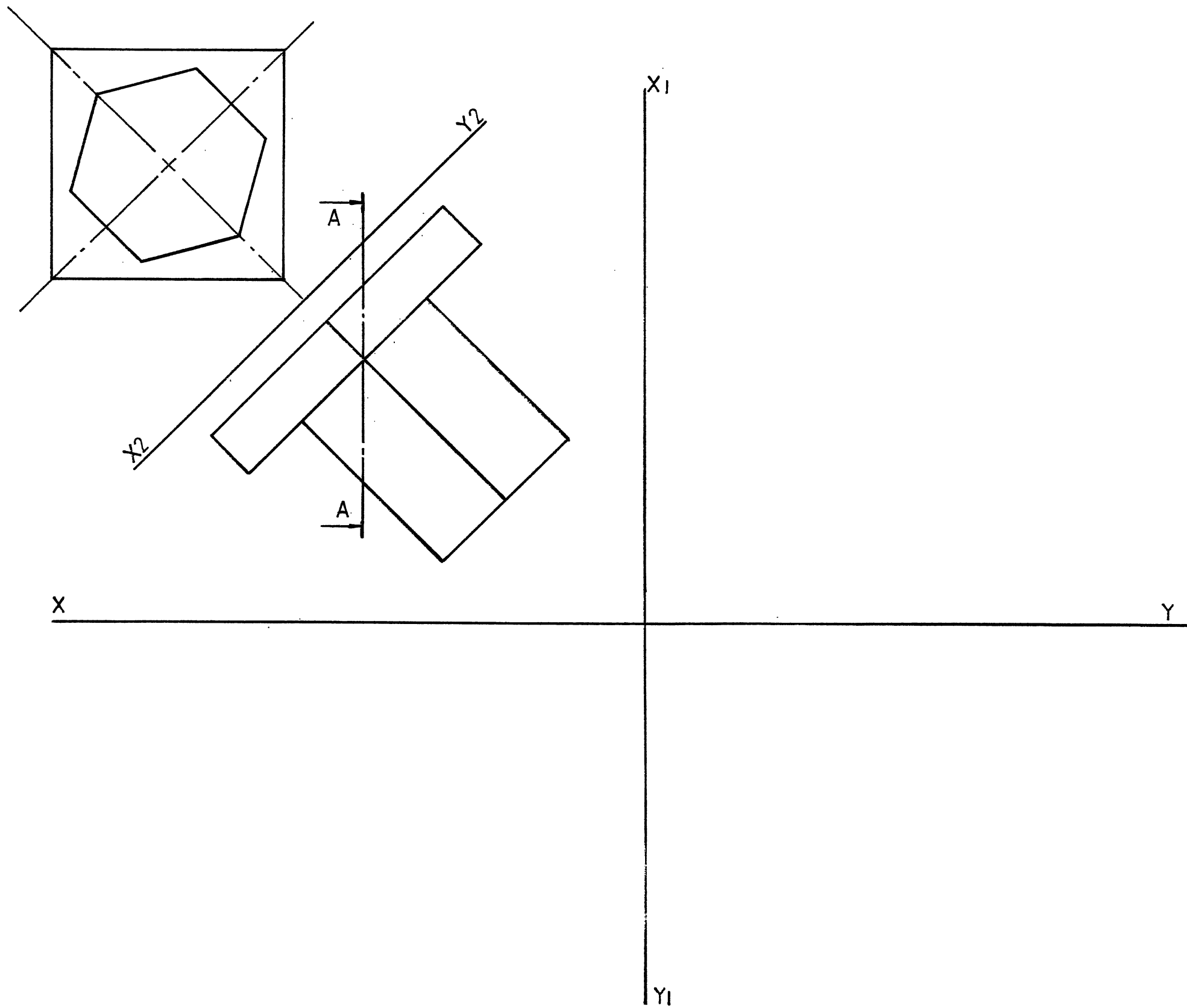


FIG. 6

**QUESTION 6**

**Figure 6** shows the front view and auxiliary view of a paper weight.

Project:

6.1 The top view. (Show all hidden detail).

17

6.2 The sectional left view on cutting plane A-A.

18

Total

35

**VRAAG 6**

**Figuur 6** toon die vooraansig en hulpaansig van 'n papiergewig.

Projekteer:

6.1 Die boaansig. (Toon alle verborge detail).

17

6.2 Die deursnee linkeraansig op snyvlak A-A.

18

Totaal

35

EXAMINATION NO.  
EKSAMENNOMMER

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QUESTION 6  
VRAAG 6

ANSWER SHEET 6  
ANTWOORDVEL 6

