



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## **NASIENRIGLYN**

### **NATIONALE SERTIFIKAAT ALGEMENE TEKENWERK**

**13 AUGUSTUS 2019**

**Hierdie nasienriglyn bestaan uit 6 bladsye.**

**VRAAG 1: DIE LOKUSSE**

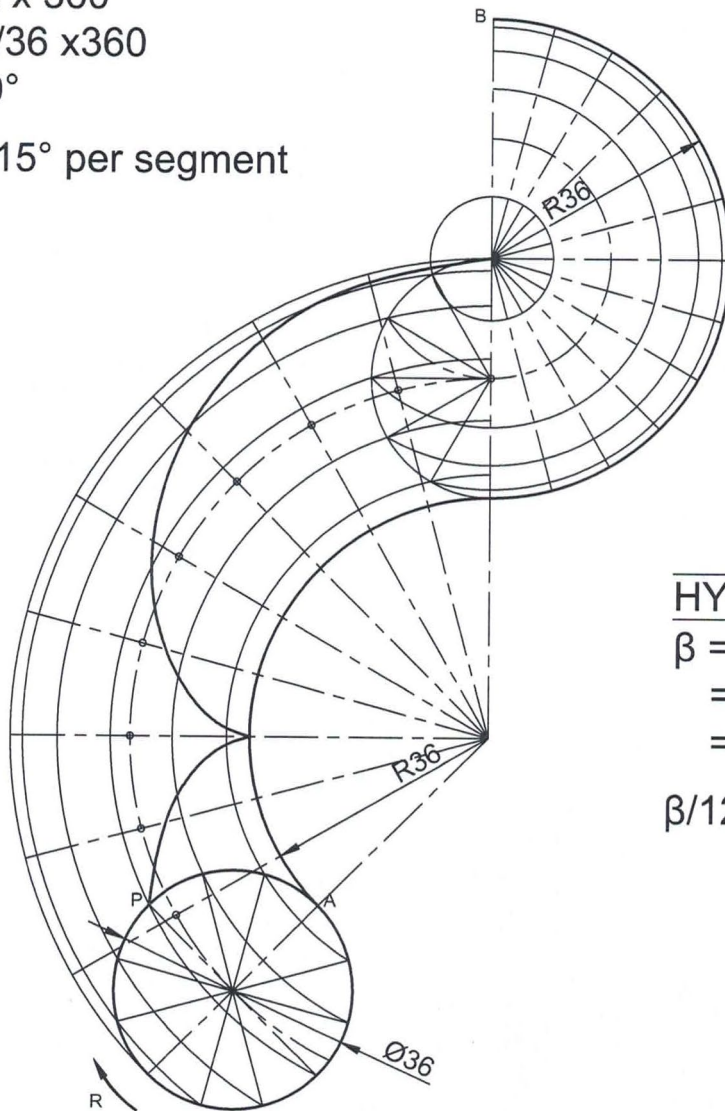
EPI-CYCLOID

$$\beta = r/R \times 360^\circ$$

$$= 18/36 \times 360$$

$$= 180^\circ$$

$$\beta/12 = 15^\circ \text{ per segment}$$



HYPO-CYCLOID

$$\beta = r/R \times 360^\circ$$

$$= 18/36 \times 360$$

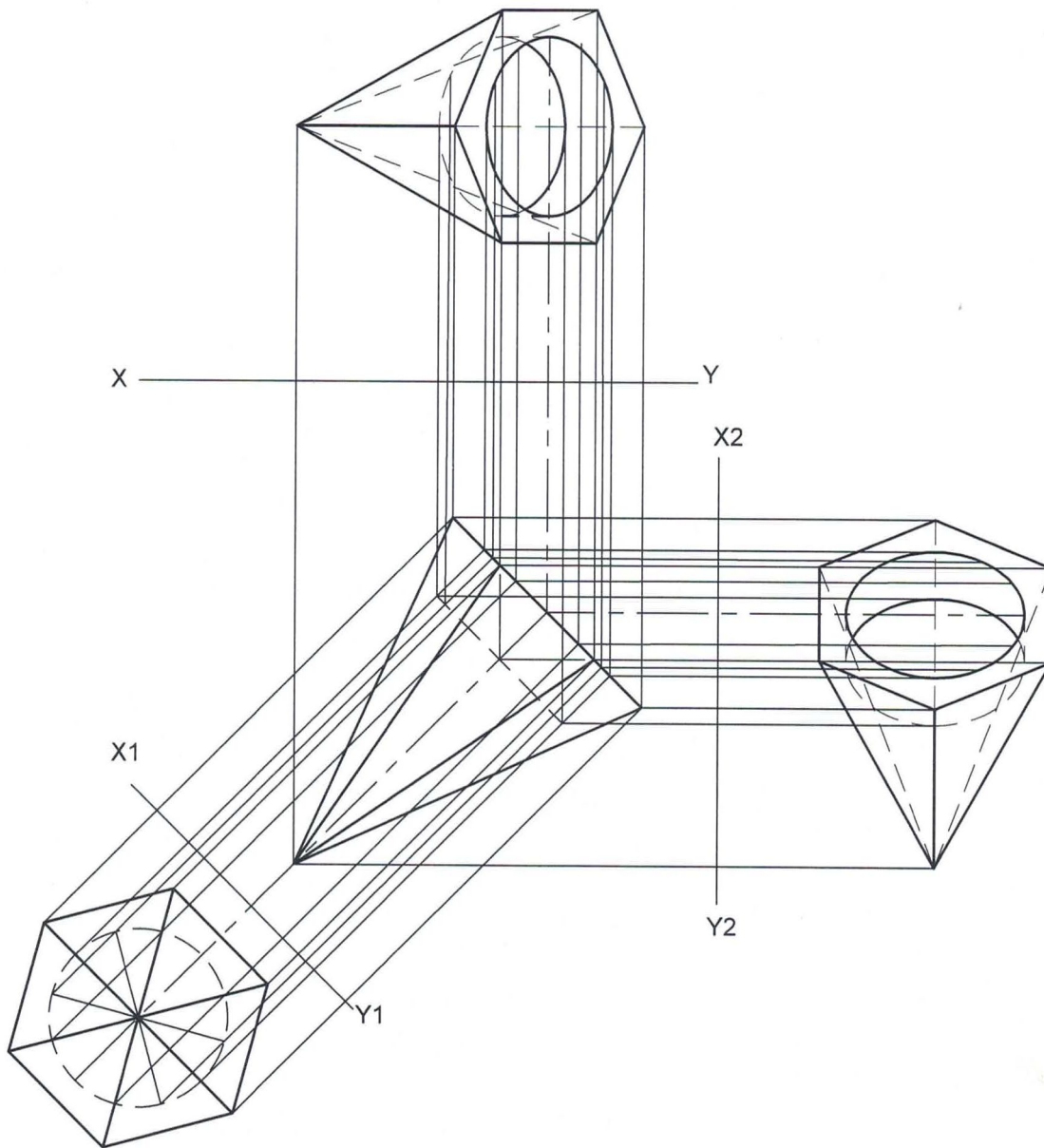
$$= 180^\circ$$

$$\beta/12 = 15^\circ \text{ per segment}$$

<b>KORREKTHEID</b>	<b>5</b>
<b>AKKURAATHEID</b>	<b>2</b>
<b>LYNWERK</b>	<b>1</b>
<b>BEREKENINGS</b>	<b>4</b>
<b>NAAM VAN LIKUSSE</b>	<b>2</b>
<b>UITLEG</b>	<b>1</b>
<b>TOTAAL</b>	<b>15</b>

[15]

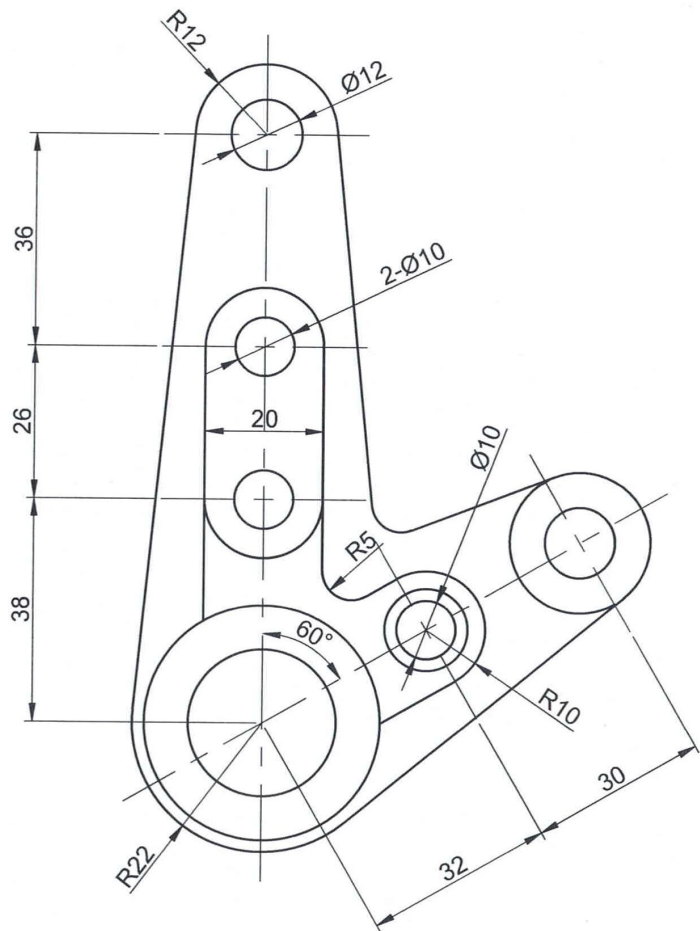
**VRAAG 2: ORTOGRAFIESE PROJESIE**



<b>KORREKTHEID</b>	<b>4</b>	<b>4</b>	<b>4</b>
<b>AKKURAAKTHEID</b>	<b>1.5</b>	<b>1</b>	<b>1</b>
<b>LYNWERK</b>	<b>2.5</b>	<b>2</b>	<b>2</b>
<b>UITLEG</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>TOTAAL</b>	<b>9</b>	<b>8</b>	<b>8</b>

[25]

**VRAAG 3: GEOMETRIESE KONSTRUKSIE**

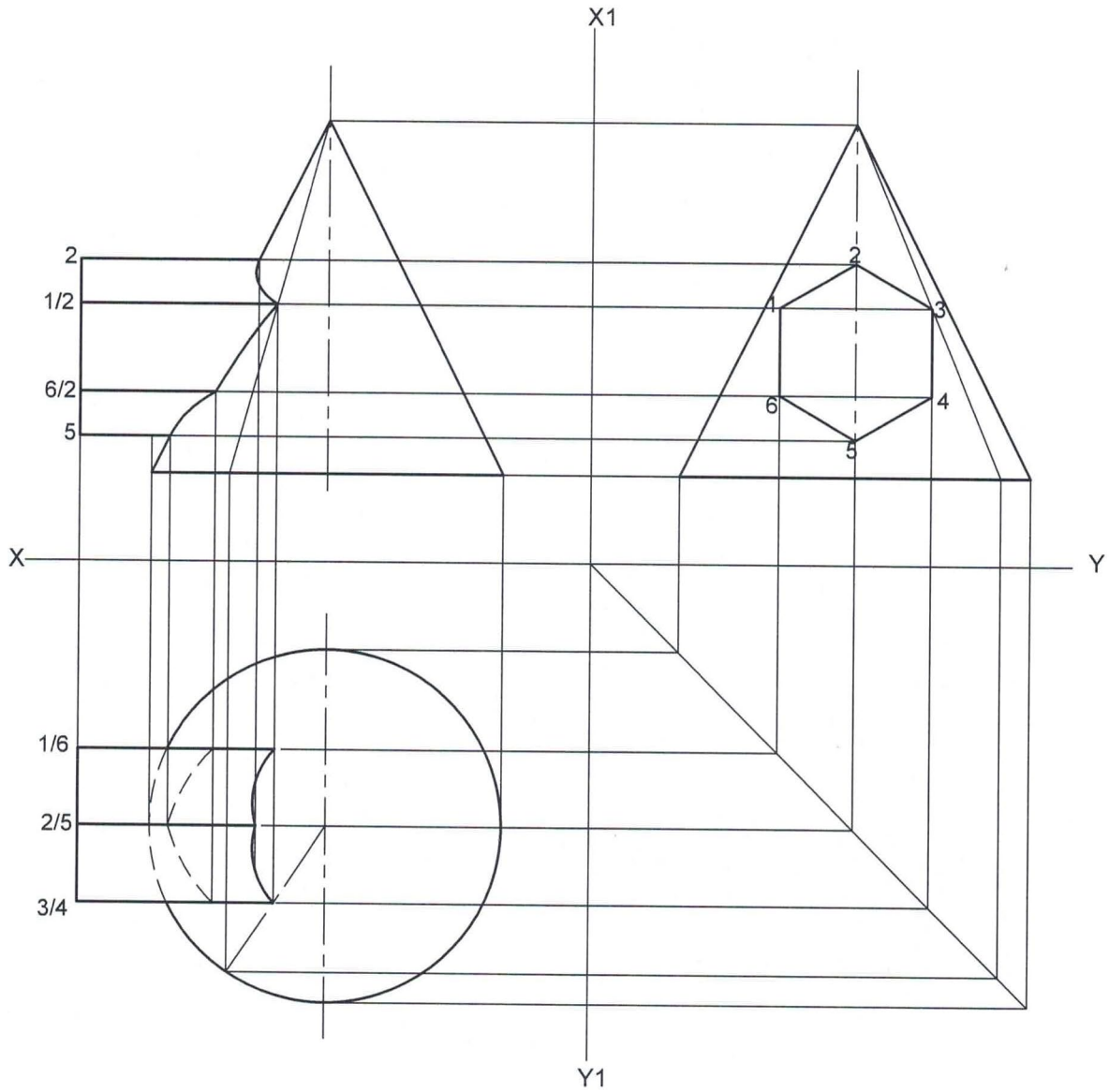


**KNIEHEFBOOM  
SKAAL 1:1**

<b>KORREKTHEID</b>	<b>8</b>
<b>AKKURAAATHEID</b>	<b>4</b>
<b>LYNWERK</b>	<b>4</b>
<b>DIMENSIES</b>	<b>5</b>
<b>OPSKRIF EN SKAAL</b>	<b>2</b>
<b>UITLEG</b>	<b>2</b>
<b>TOTAAL</b>	<b>25</b>

[25]

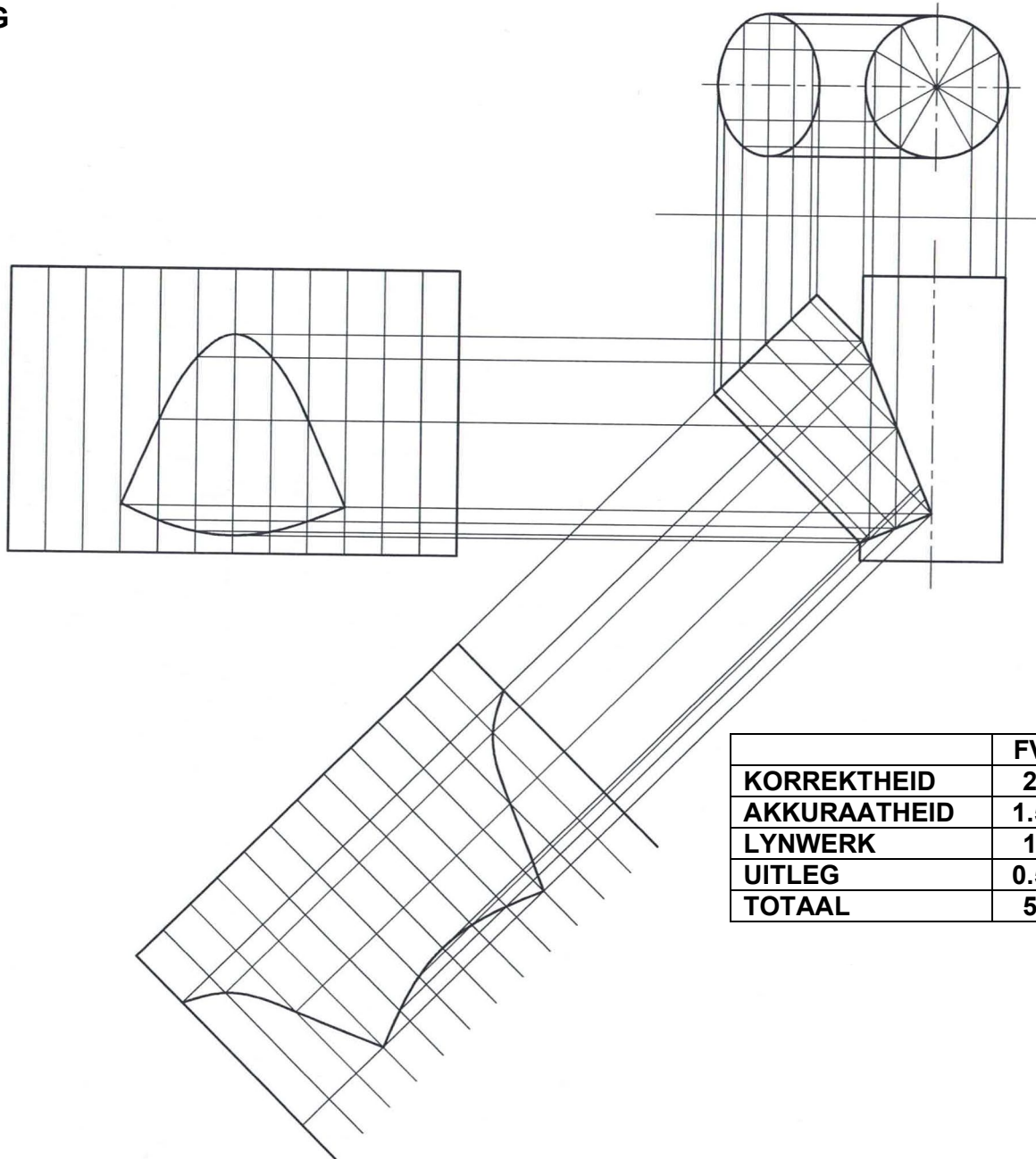
**VRAAG 4: INTERPENETRASIE**



	FV	TV
<b>KORREKTHEID</b>	<b>3.5</b>	<b>3.5</b>
<b>AKKURAATHEID</b>	<b>1</b>	<b>1</b>
<b>LYNWERK</b>	<b>2</b>	<b>2</b>
<b>UITLEG</b>	<b>1</b>	<b>1</b>
<b>TOTAAL</b>	<b>7.5</b>	<b>7.5</b>

[15]

**VRAAG 5: ONTWIKKELING**



	FV	R/PYP	M/PYP
<b>KORREKTHEID</b>	<b>2</b>	<b>4</b>	<b>4</b>
<b>AKKURAAKTHEID</b>	<b>1.5</b>	<b>1.5</b>	<b>1.5</b>
<b>LYNWERK</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>UITLEG</b>	<b>0.5</b>	<b>1</b>	<b>1</b>
<b>TOTAAL</b>	<b>5</b>	<b>7.5</b>	<b>7.5</b>

**TOTAAL : [20]  
100**