

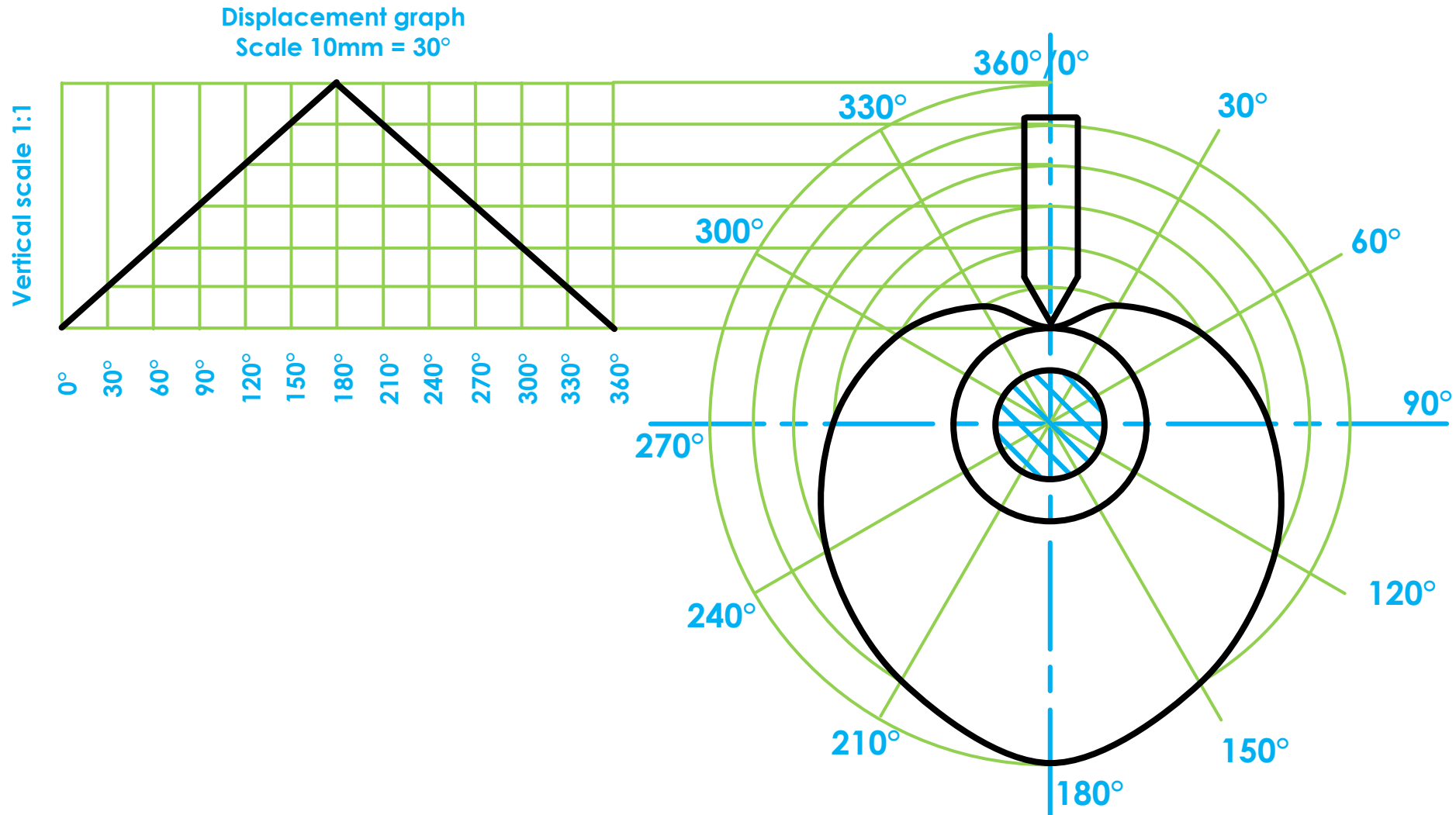


# LOCI of a CAM

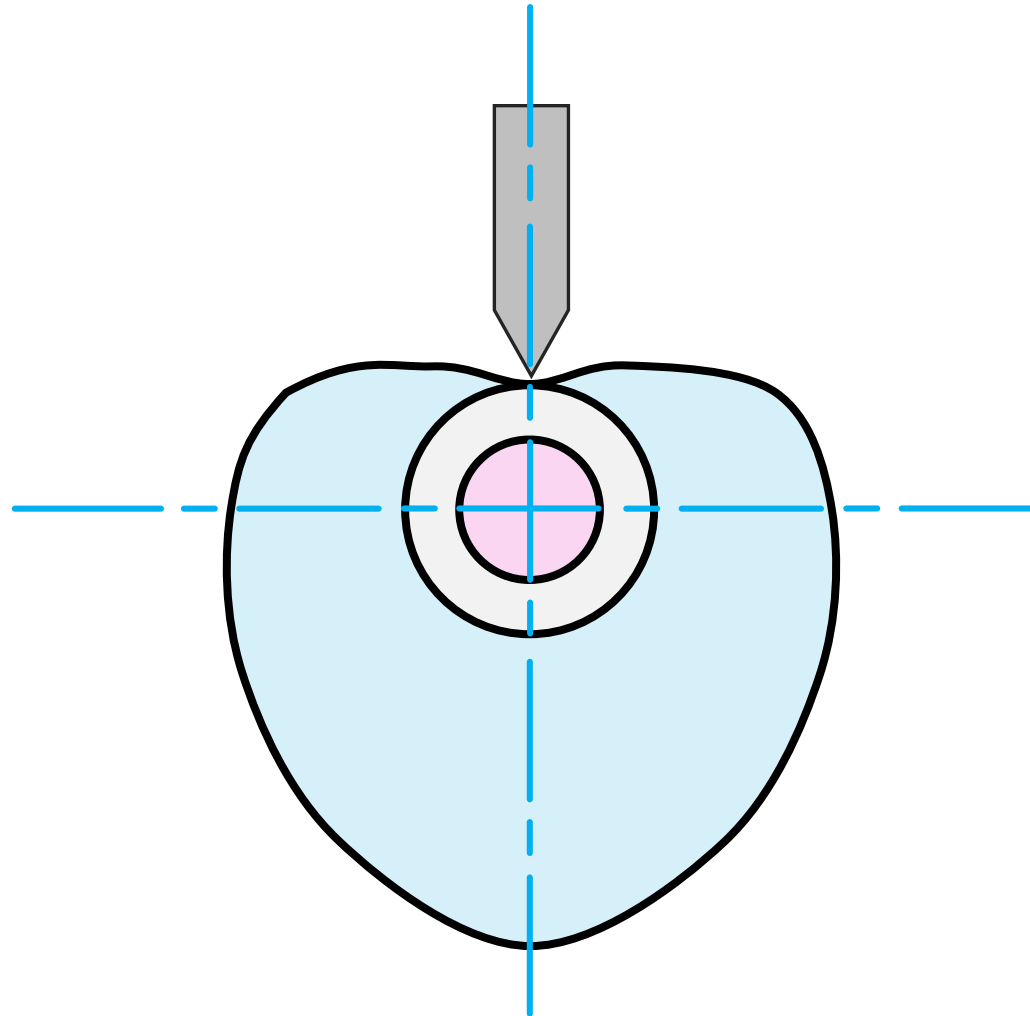
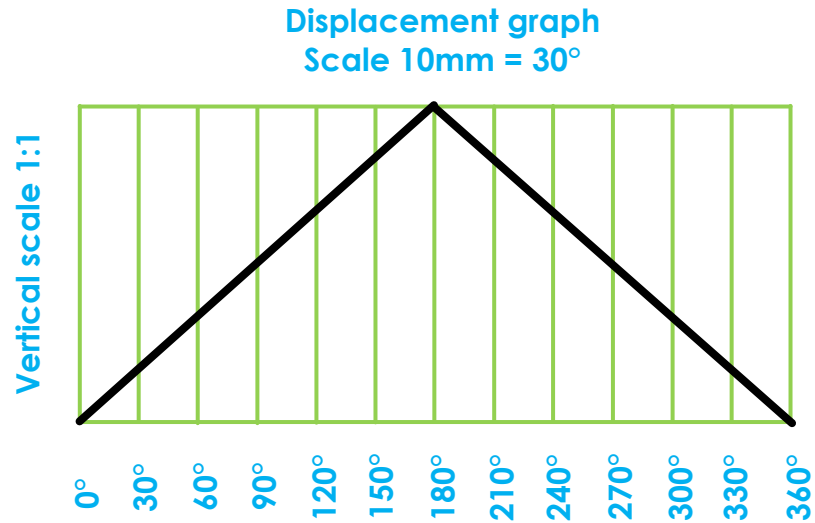
**Grade 11 & 12**

Developed by: PC Viljoen  
Senior Educational Specialist for  
Engineering Graphics and Design  
Free State Province

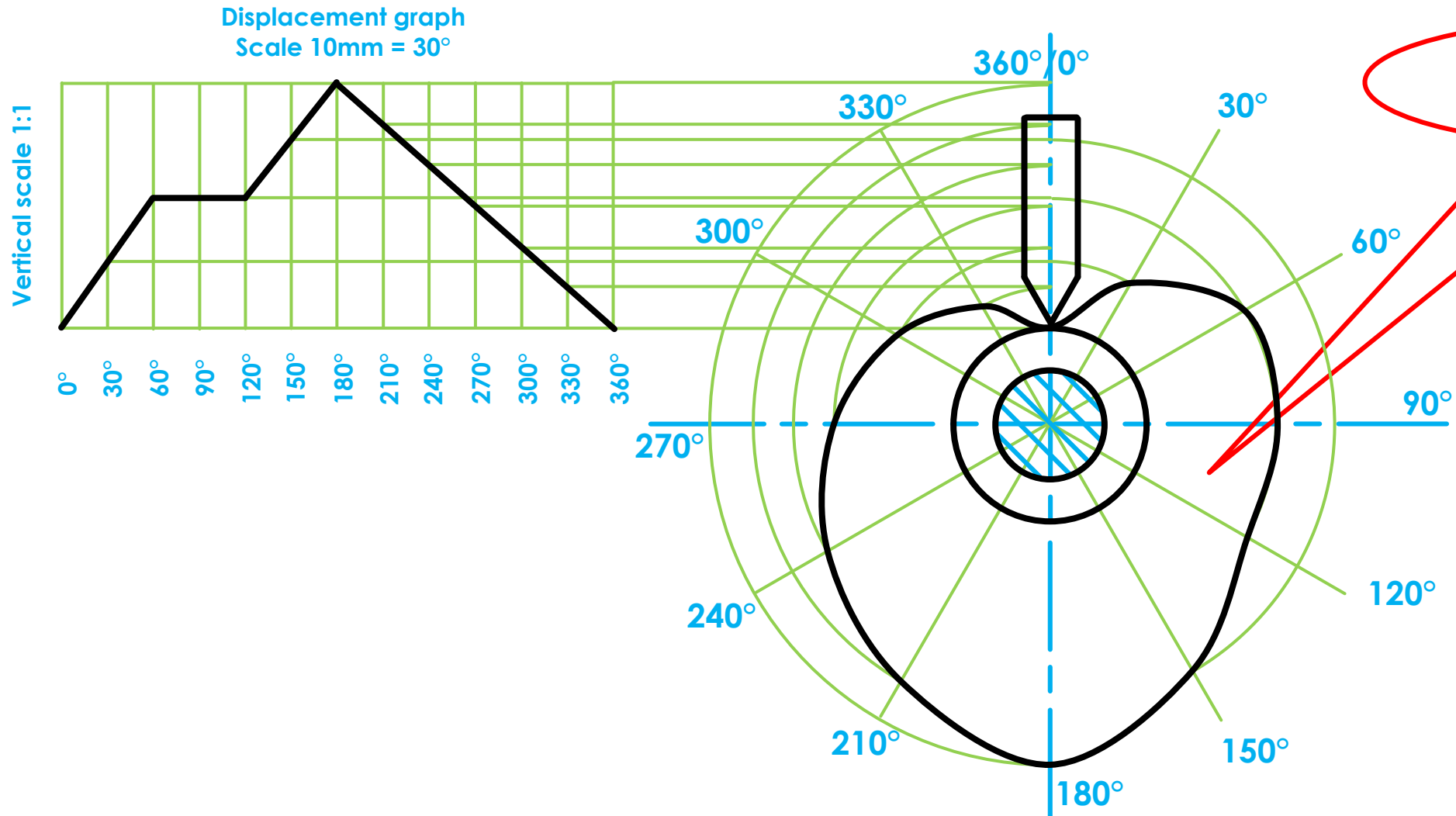
# Loci of a CAM: General information



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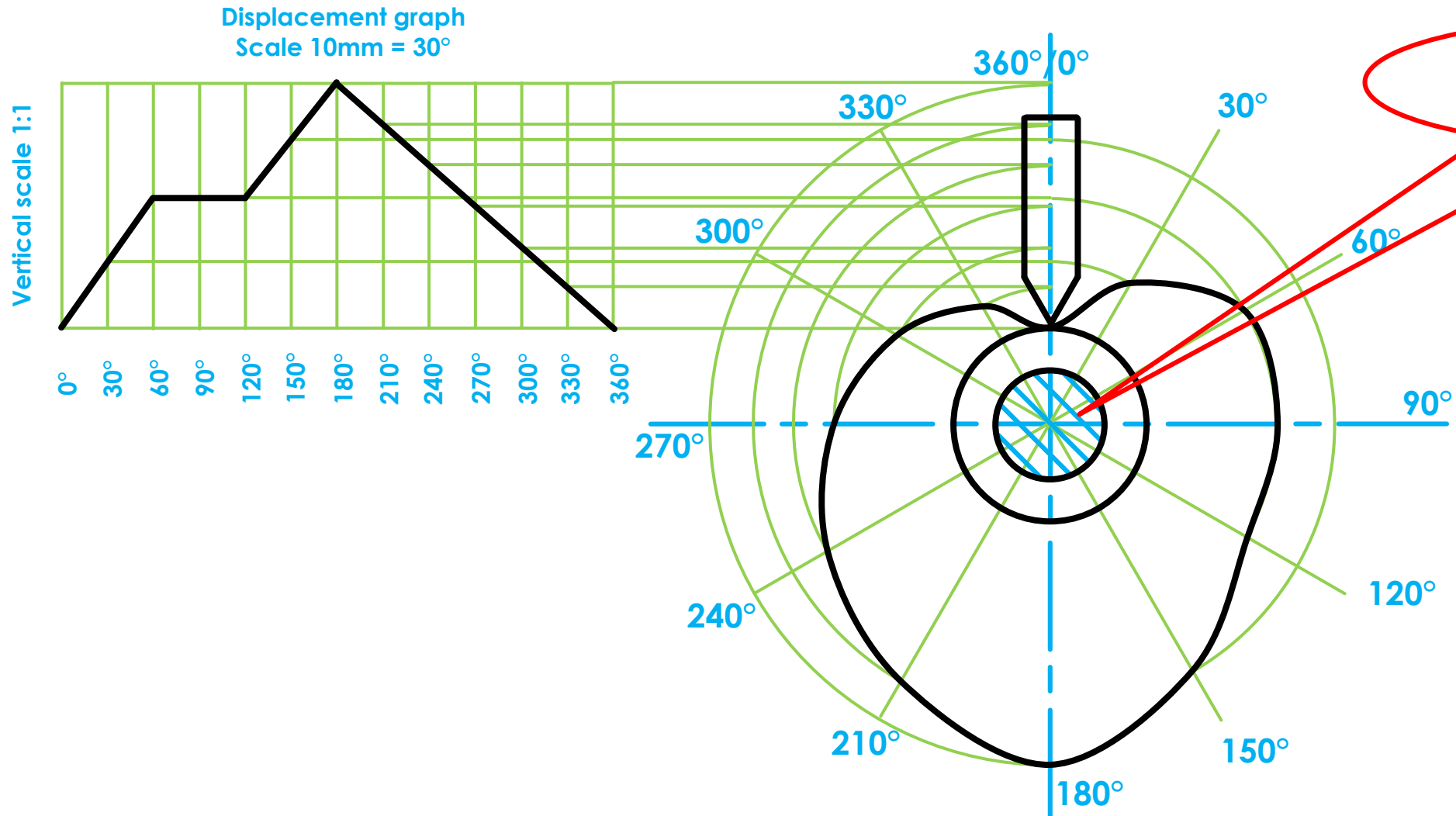


# Loci of a CAM: General information



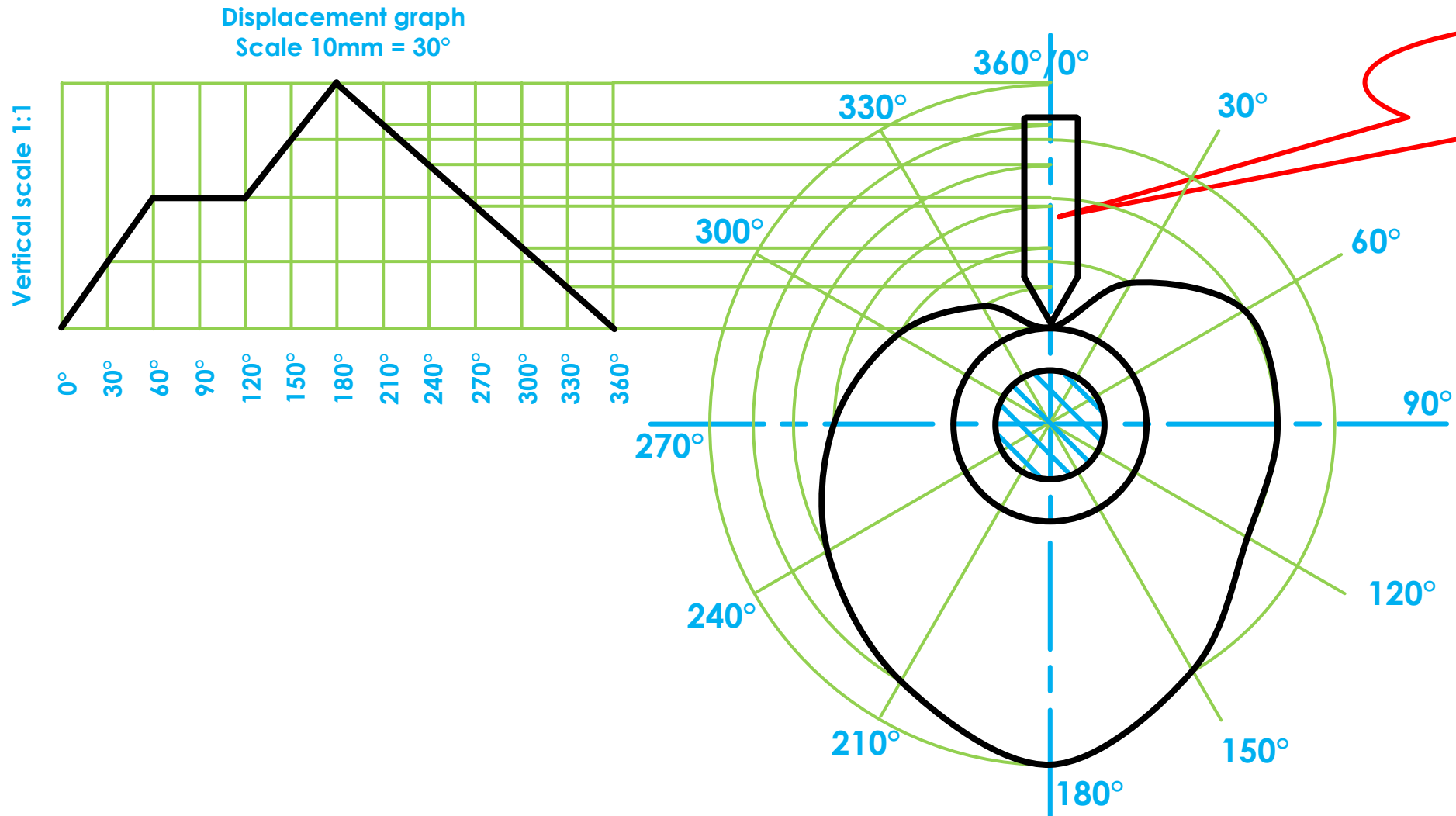
The cam plate

# Loci of a CAM: General information



The cam shaft

# Loci of a CAM: General information

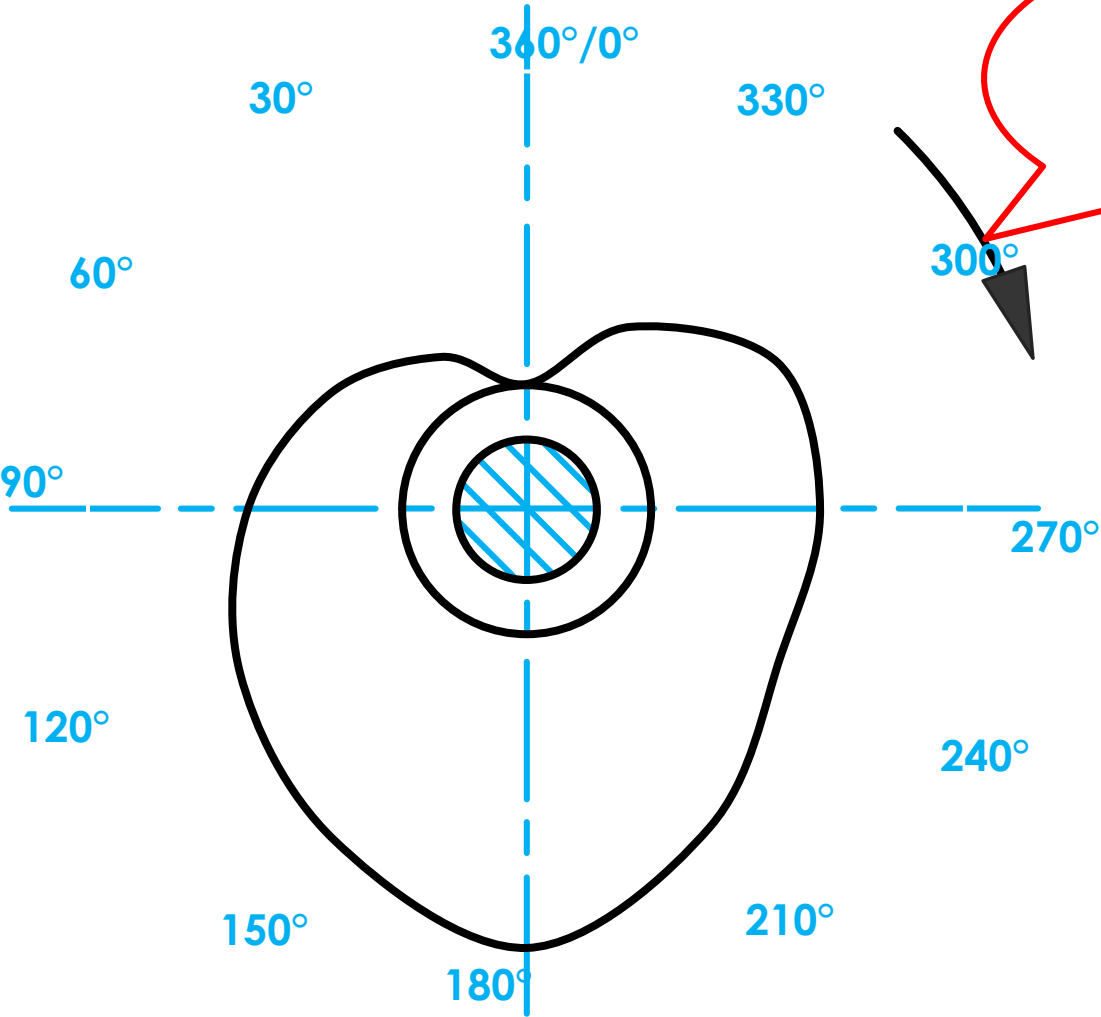
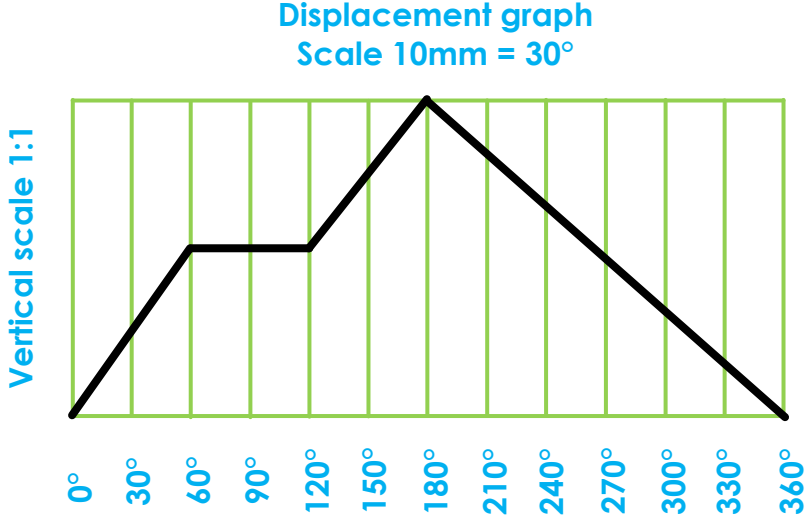


The cam follower

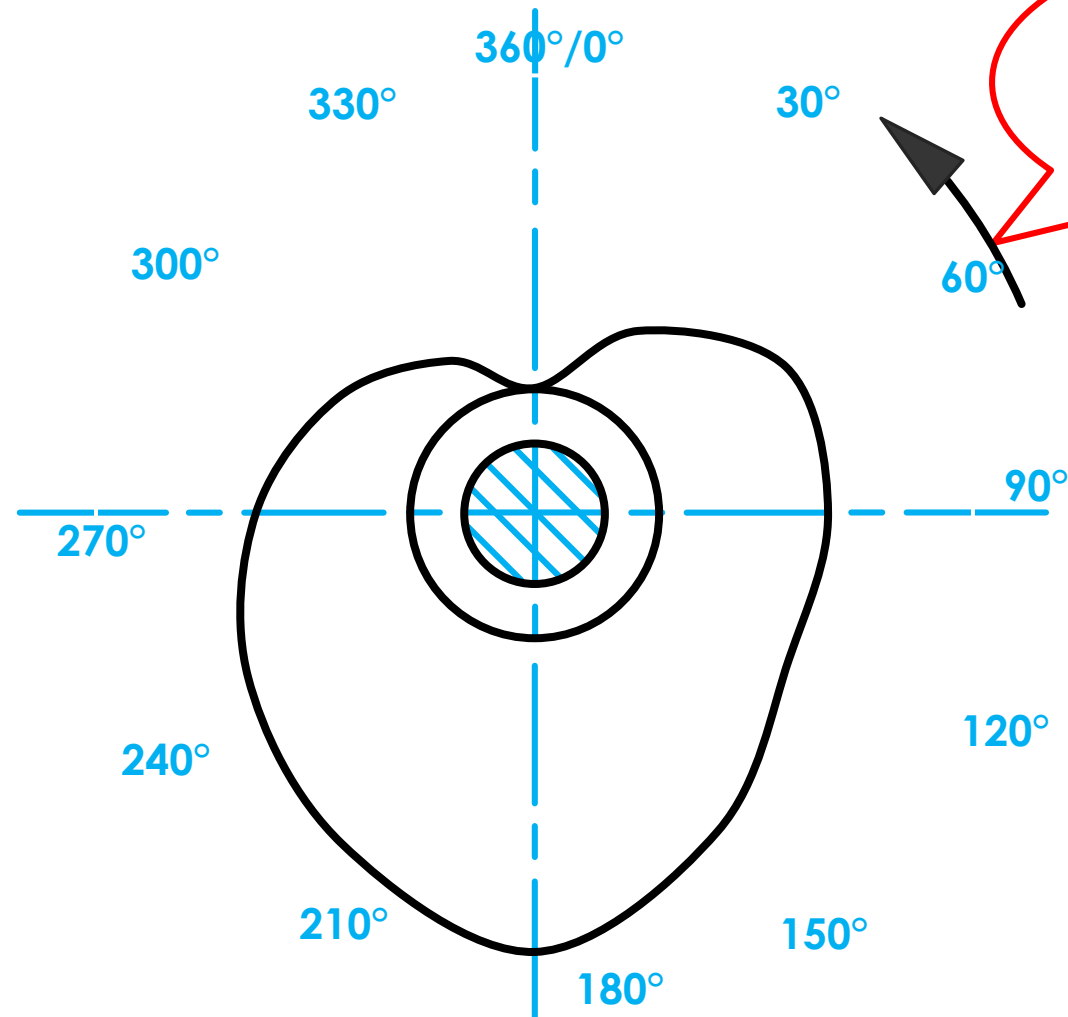
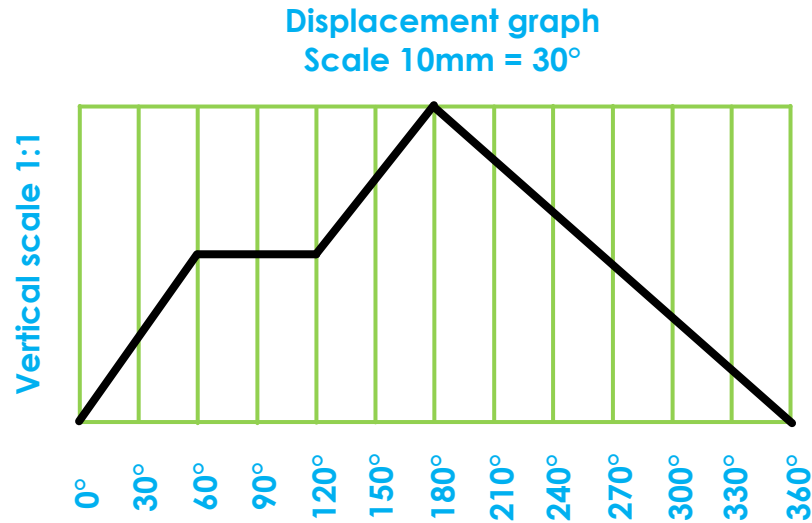
# Loci of a CAM: General information

- The cam plate can rotate in a clockwise or an anti-clockwise direction

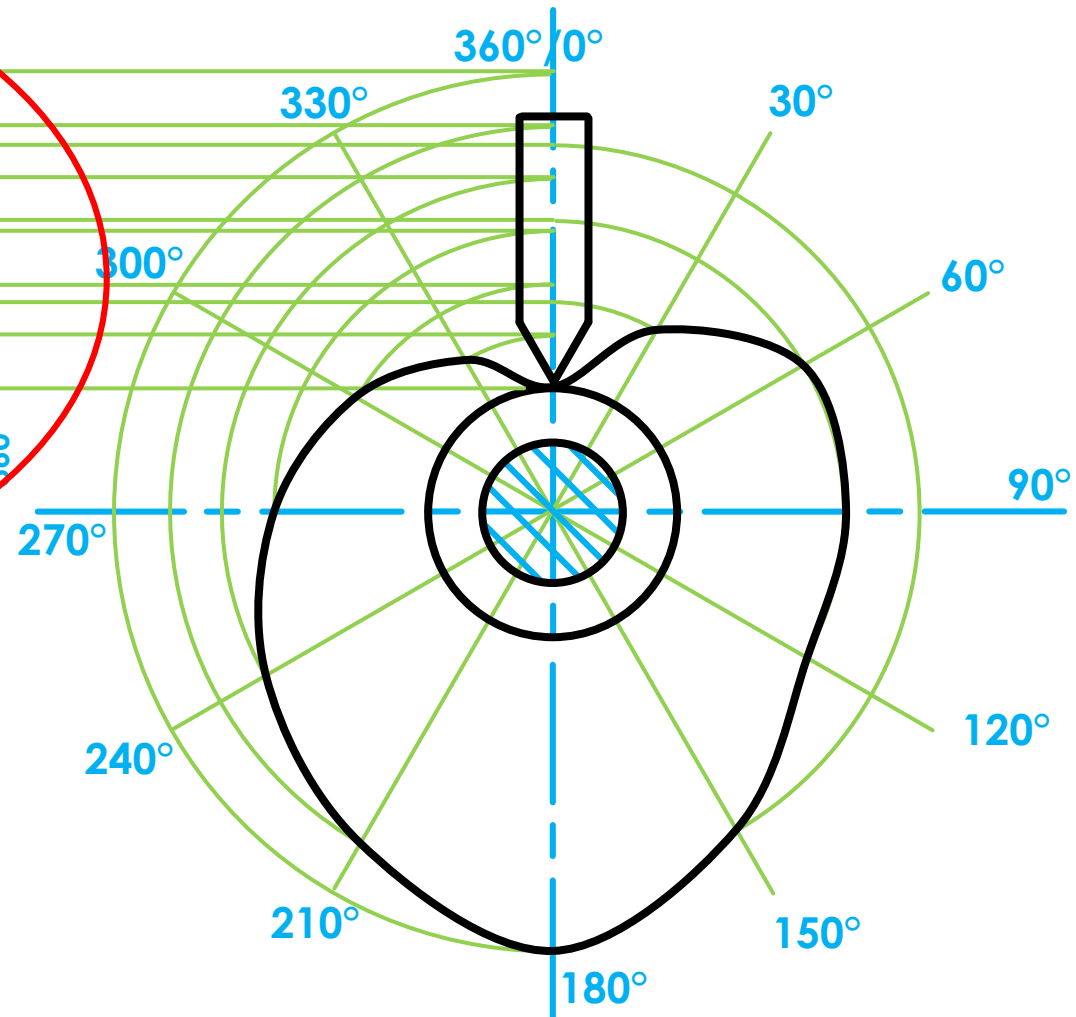
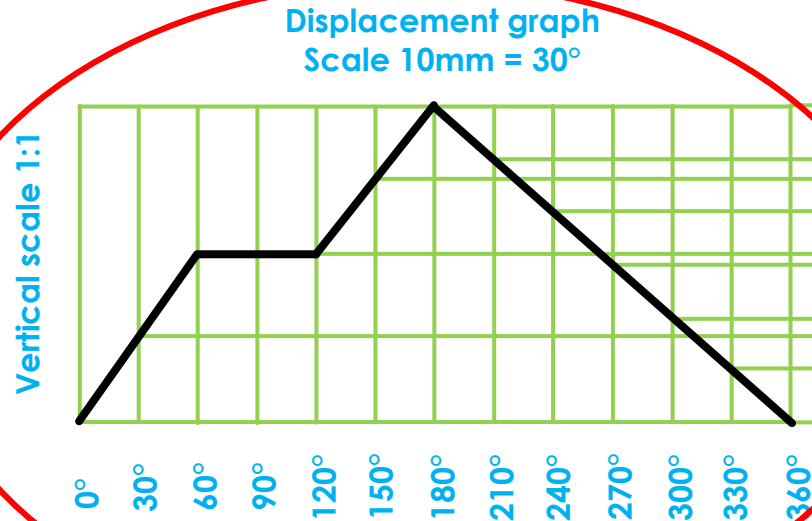
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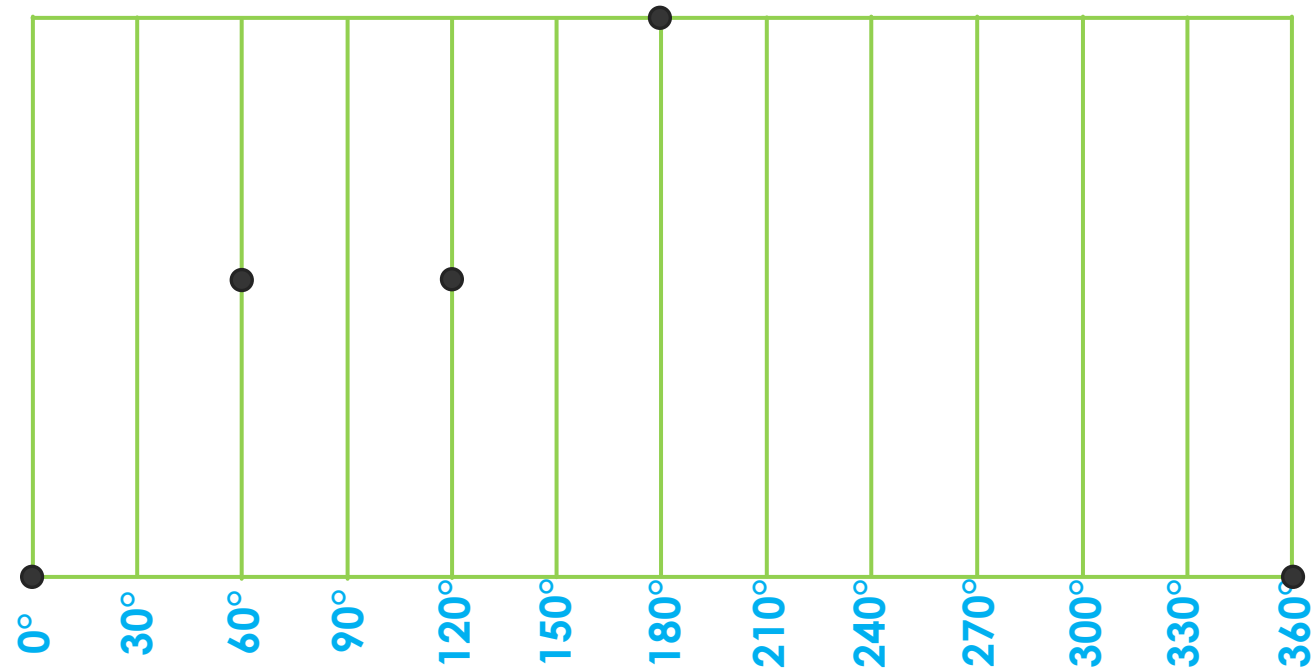
# Loci of a CAM: General information

- There are three different type of movements:
  - Uniform movement
  - Harmonic movement (grade 12 content)
  - Acceleration and retardation movement (grade 12 content)

# Loci of a CAM: UNIFORM MOVEMENT

## By means of uniform motion

- $0^\circ$ - $60^\circ$ : Rise for 50%
- $60^\circ$ - $120^\circ$ : Rest
- $120^\circ$ - $180^\circ$ : Rise to maximum
- $180^\circ$ - $360^\circ$ : Back to original position



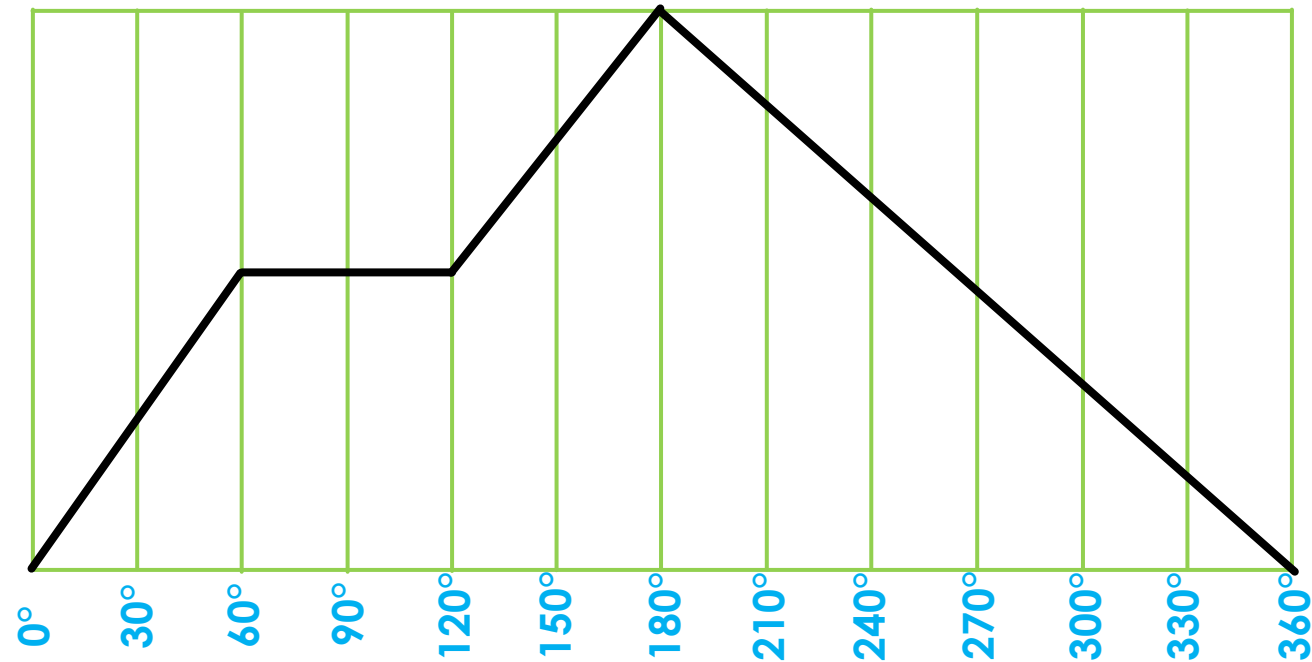
Displacement graph  
Scale 10mm =  $30^\circ$

Vertical scale 1:1

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Vertical scale 1:1

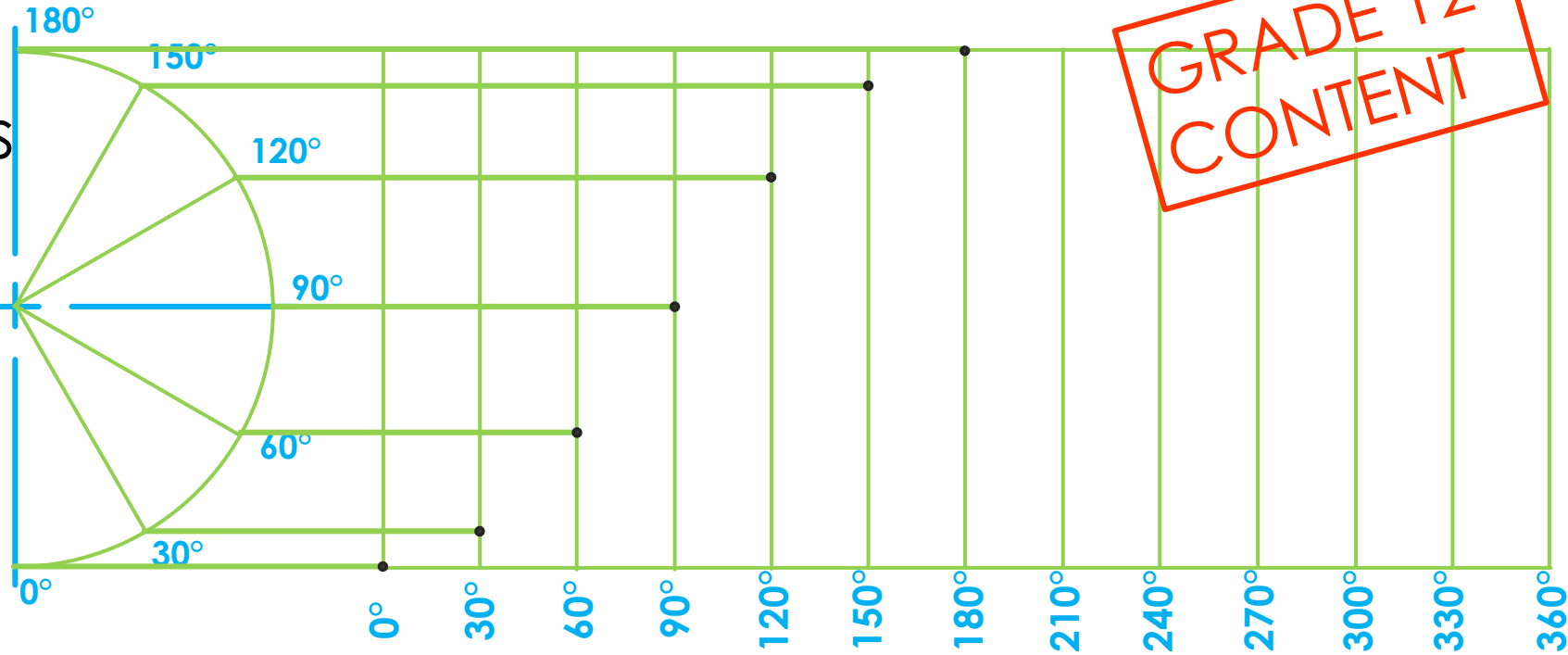
Displacement graph  
Scale 10mm = 30°

# Loci of a CAM: General information

- There are three different type of movements:
  - Uniform movement
  - Harmonic movement (grade 12 content)
  - Acceleration and retardation movement (grade 12 content)

# Loci of a CAM: HARMONIC MOVEMENT

- $0^\circ$ - $180^\circ$ :  
Rise by means of **Harmonic movement**
- $180^\circ$ - $360^\circ$ :  
Move to original position by means of **Uniform movement**

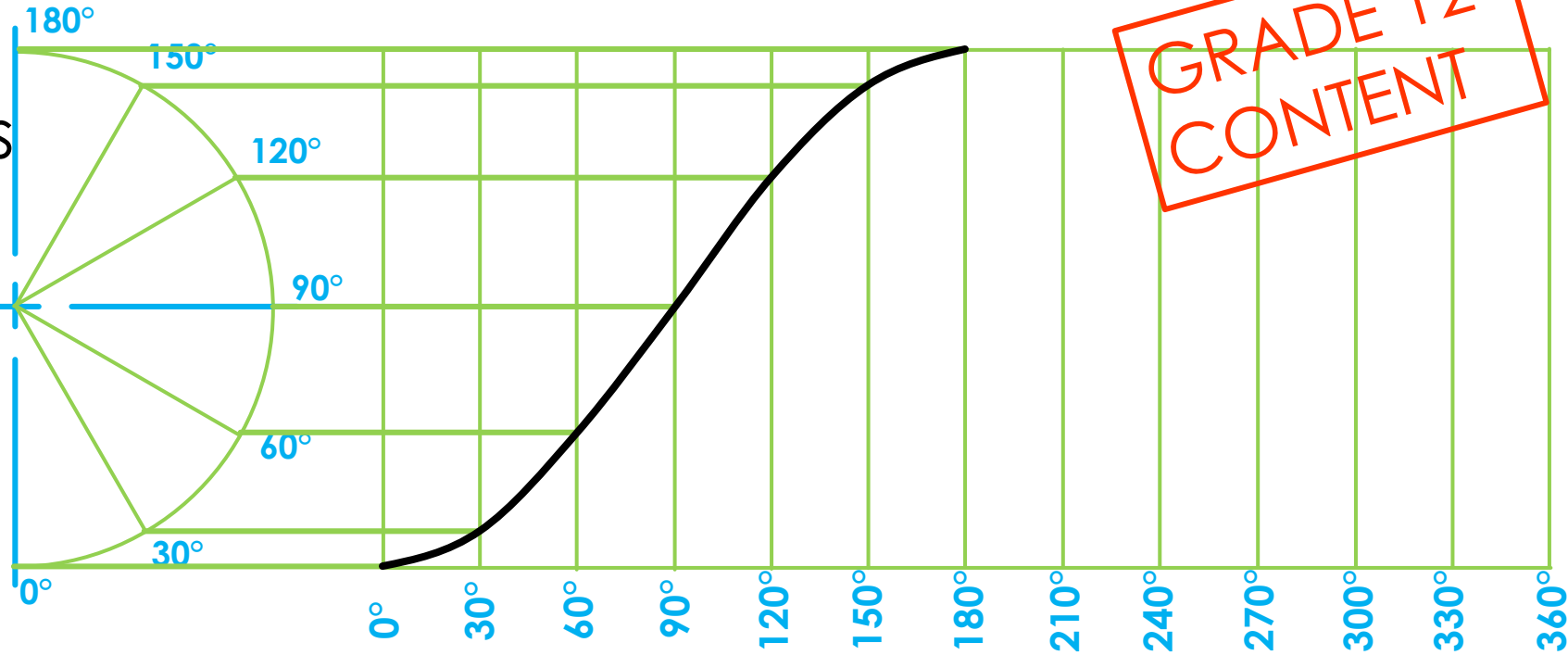


Displacement graph  
Scale 10mm =  $30^\circ$

Vertical scale 1:1

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Move to original position by means of **Uniform movement**



Displacement graph  
Scale 10mm =  $30^\circ$

Vertical scale 1:1

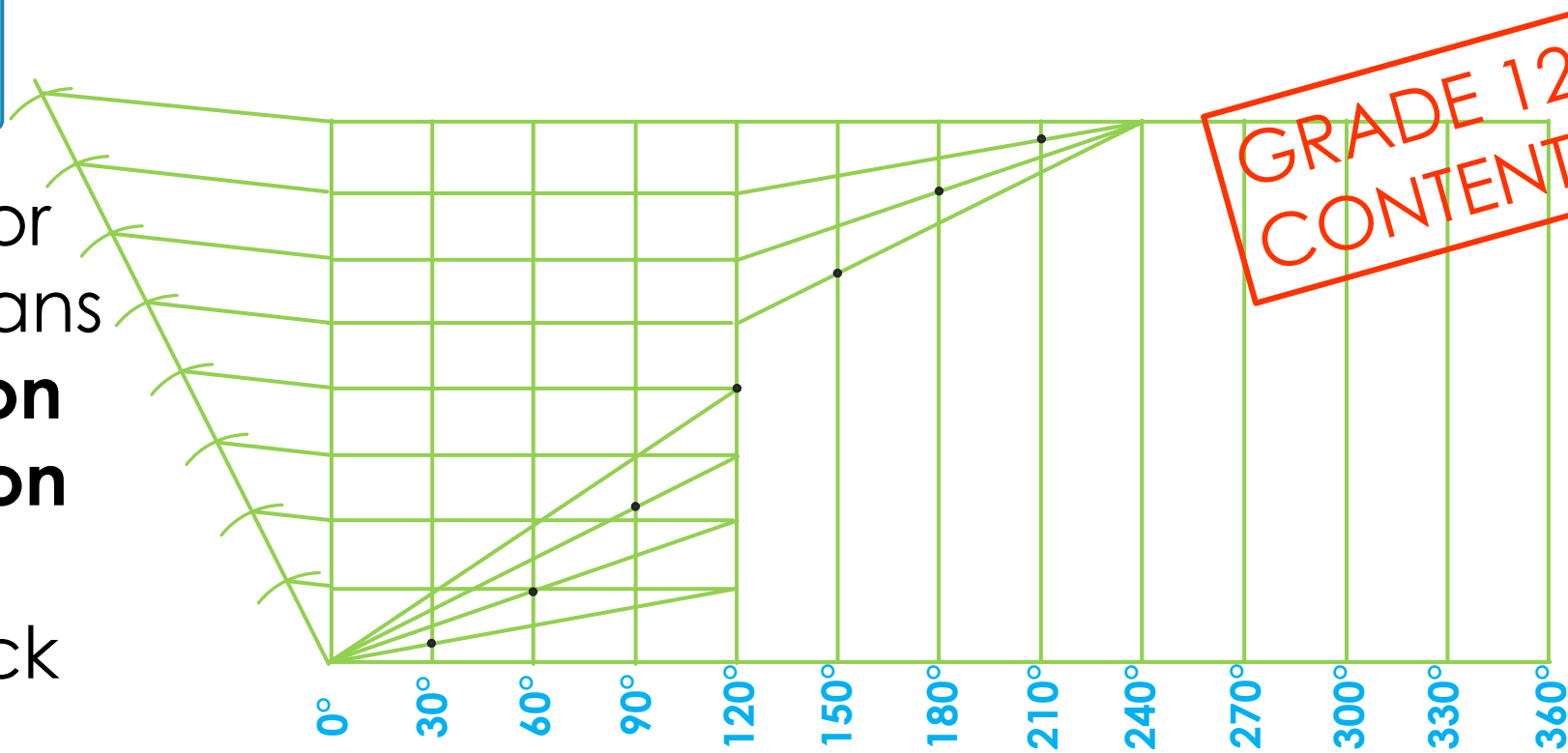
# Loci of a CAM: General information

- There are three different type of movements:
  - Uniform movement
  - Harmonic movement (grade 12 content)
  - Acceleration and retardation movement (grade 12 content)

# Loci of a CAM: ACCELERATION & RETARDATION MOVEMENT

Equal number

- $0^\circ$ - $240^\circ$ : Rise for 50mm by means of **acceleration and retardation movement**
- $240^\circ$ - $360^\circ$ : Back to original position by means of **uniform motion**



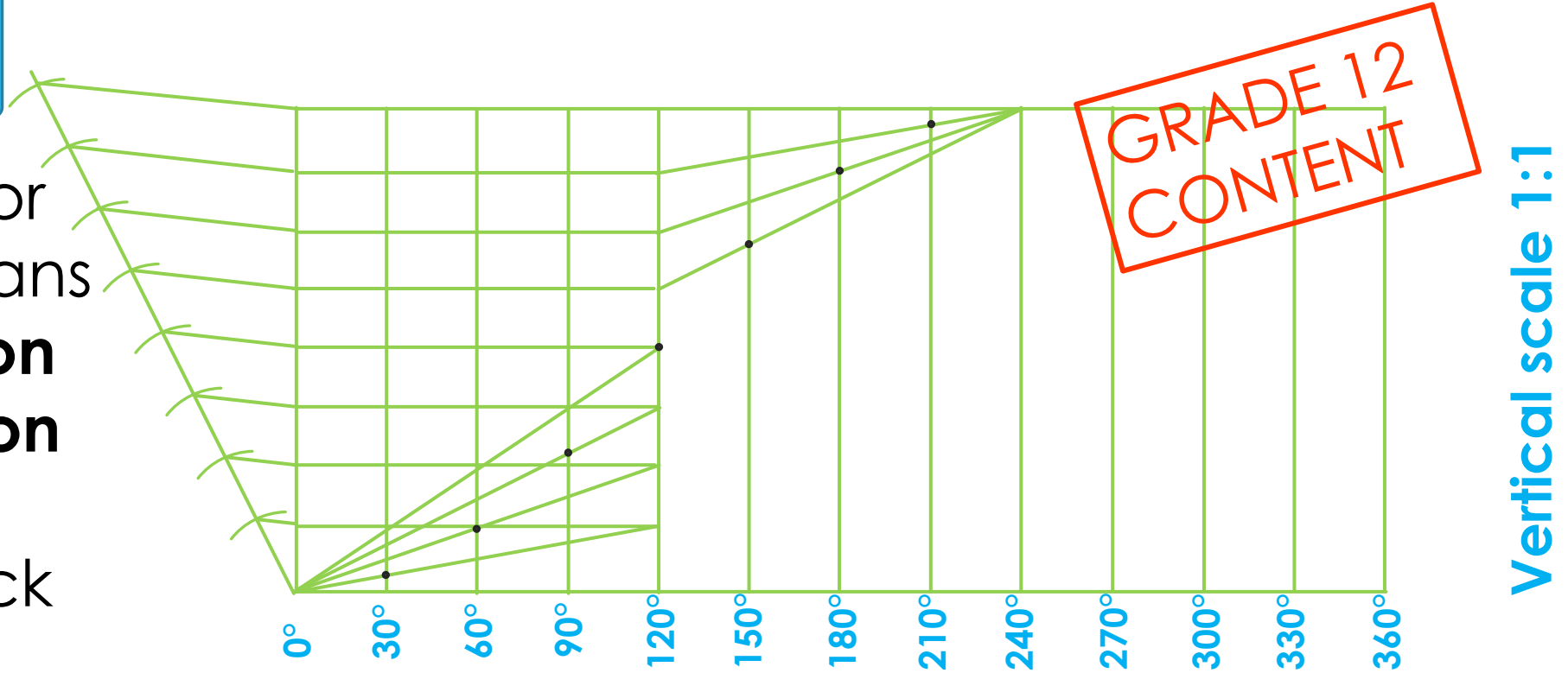
Displacement graph  
Scale 10mm =  $30^\circ$

Vertical scale 1:1

# Loci of a CAM: ACCELERATION & RETARDATION MOVEMENT

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- $0^\circ$ - $240^\circ$ : Rise for 50mm by means of **acceleration and retardation movement**
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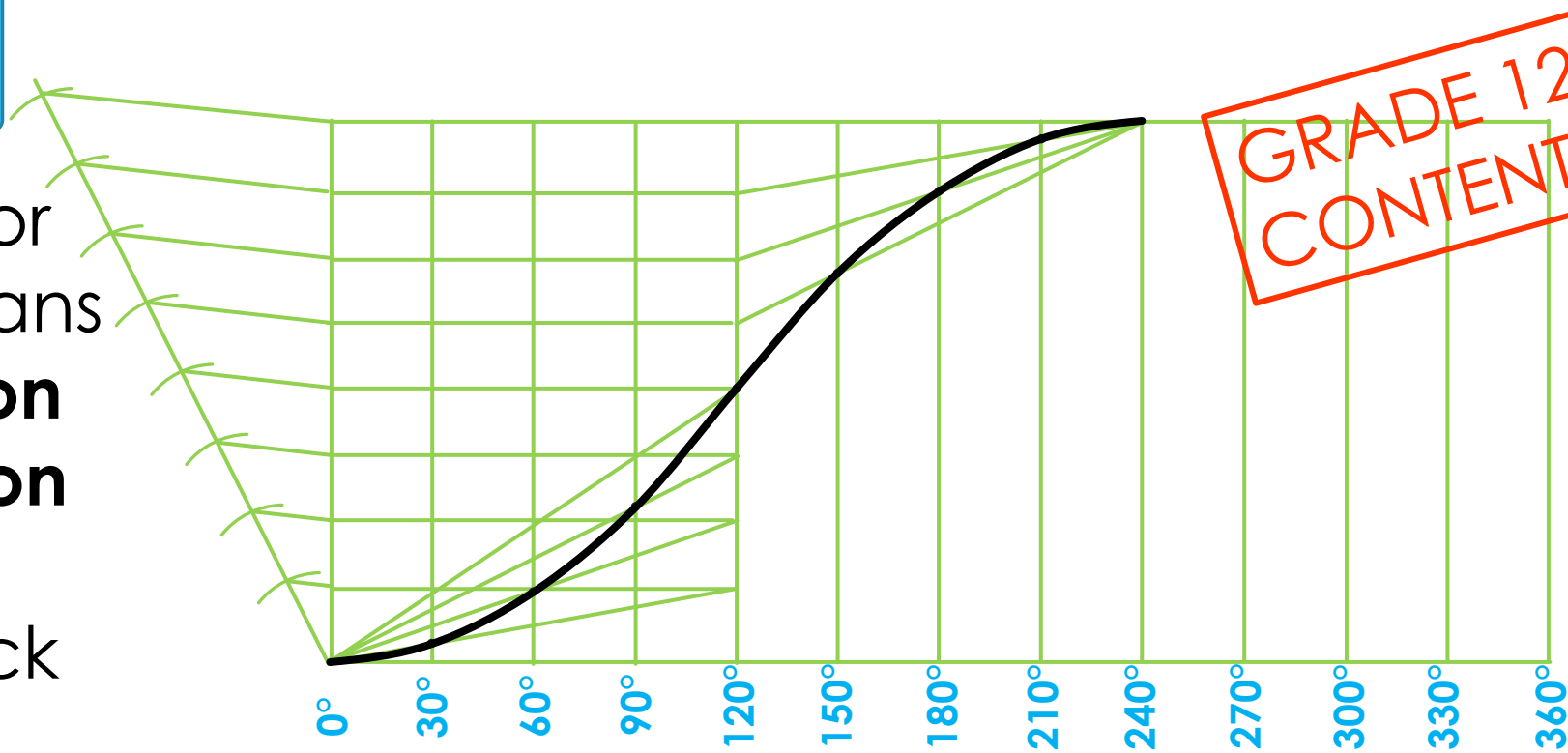


Displacement graph  
Scale 10mm =  $30^\circ$

# Loci of a CAM: ACCELERATION & RETARDATION MOVEMENT

Equal number

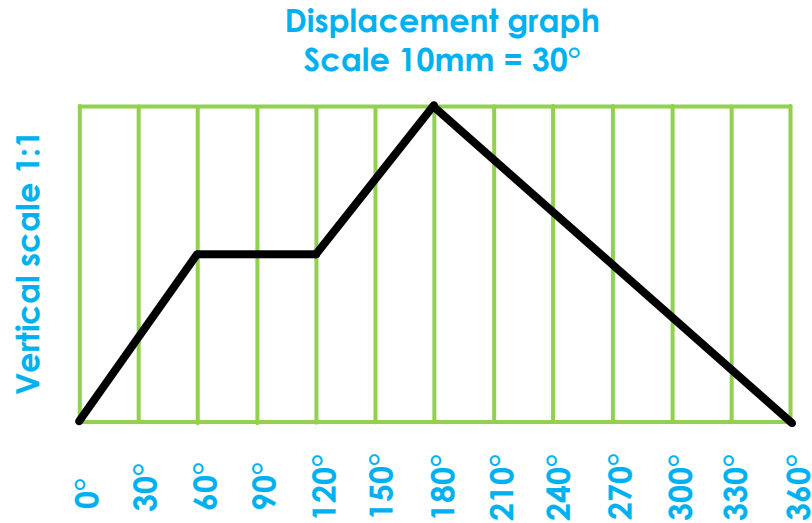
- $0^\circ$ - $240^\circ$ : Rise for 50mm by means of **acceleration and retardation movement**
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Displacement graph  
Scale 10mm =  $30^\circ$

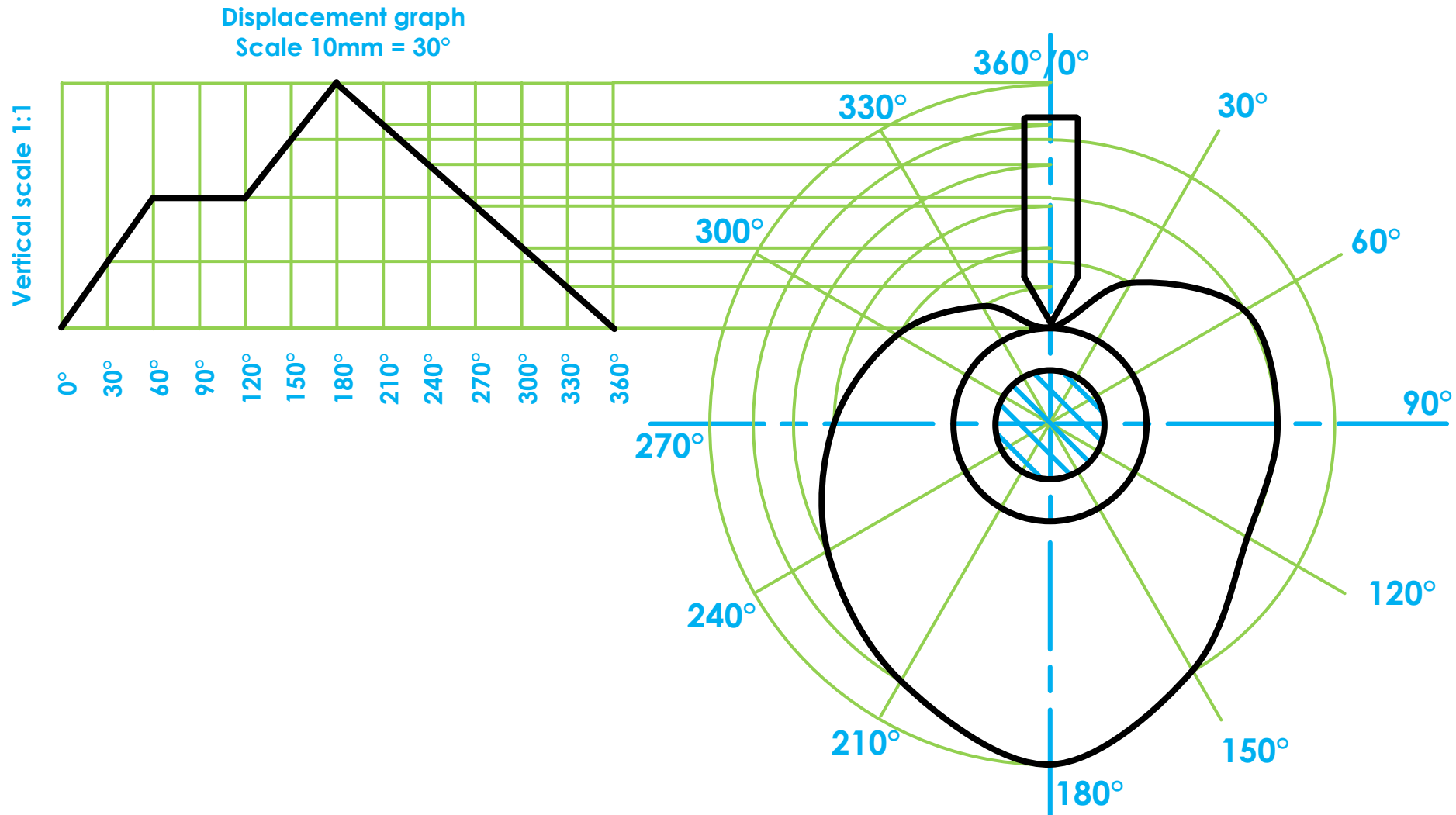
Vertical scale 1:1

# Loci of a CAM: General information



- The information on the displacement graph need to be transferred towards the cam plate

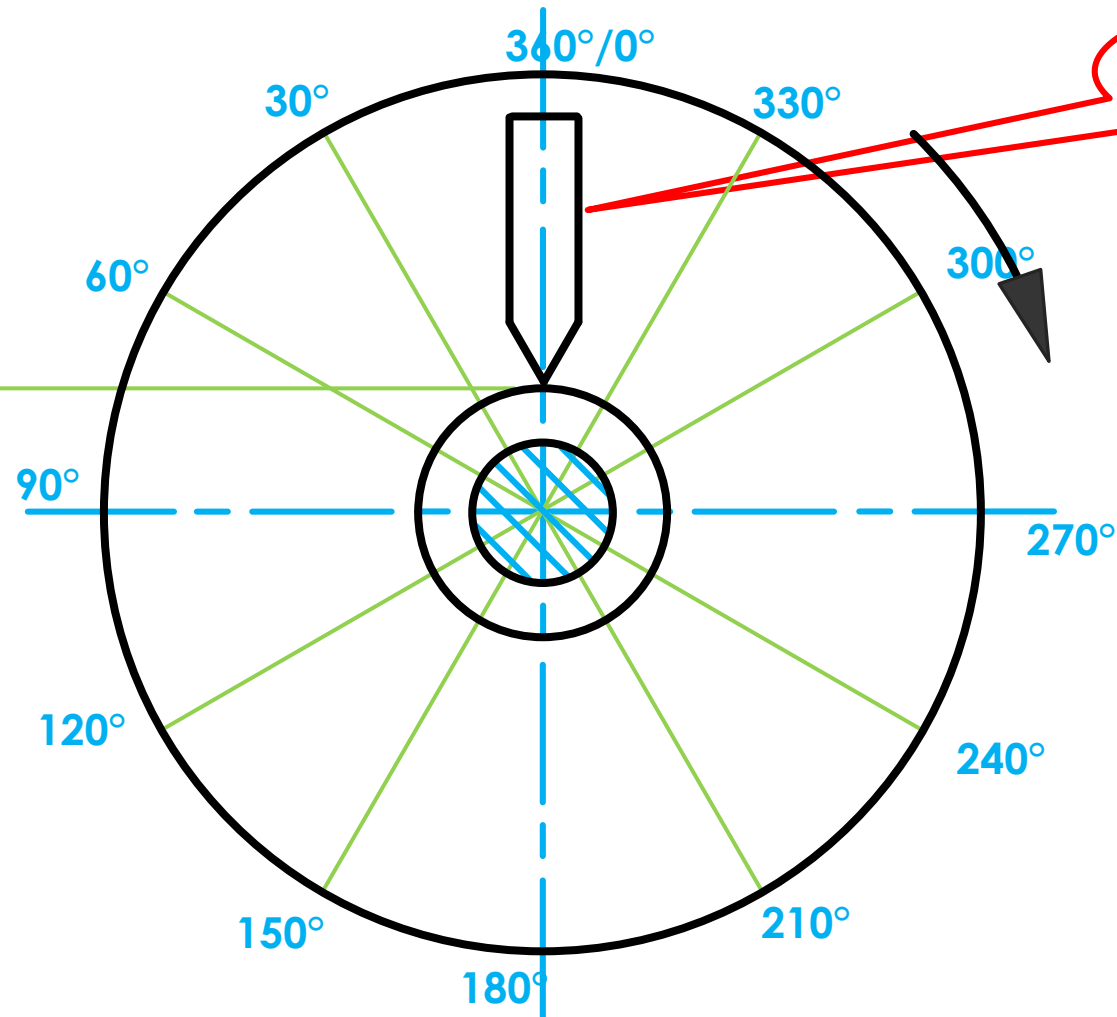
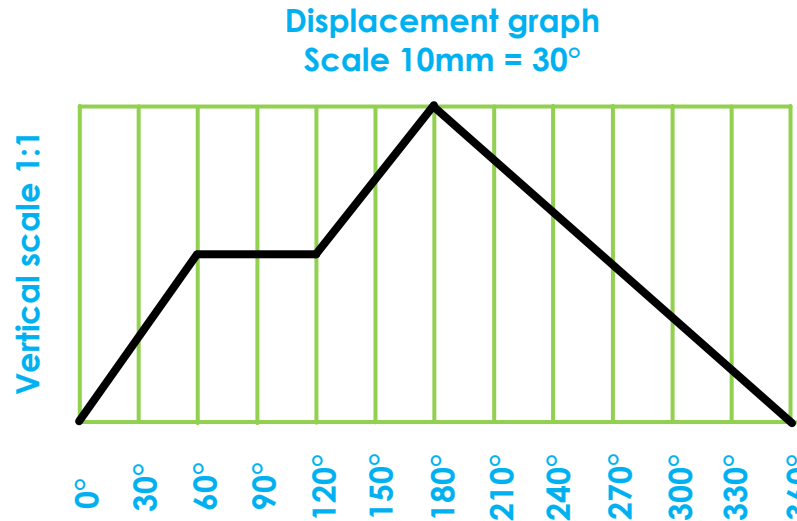
# Loci of a CAM: General information



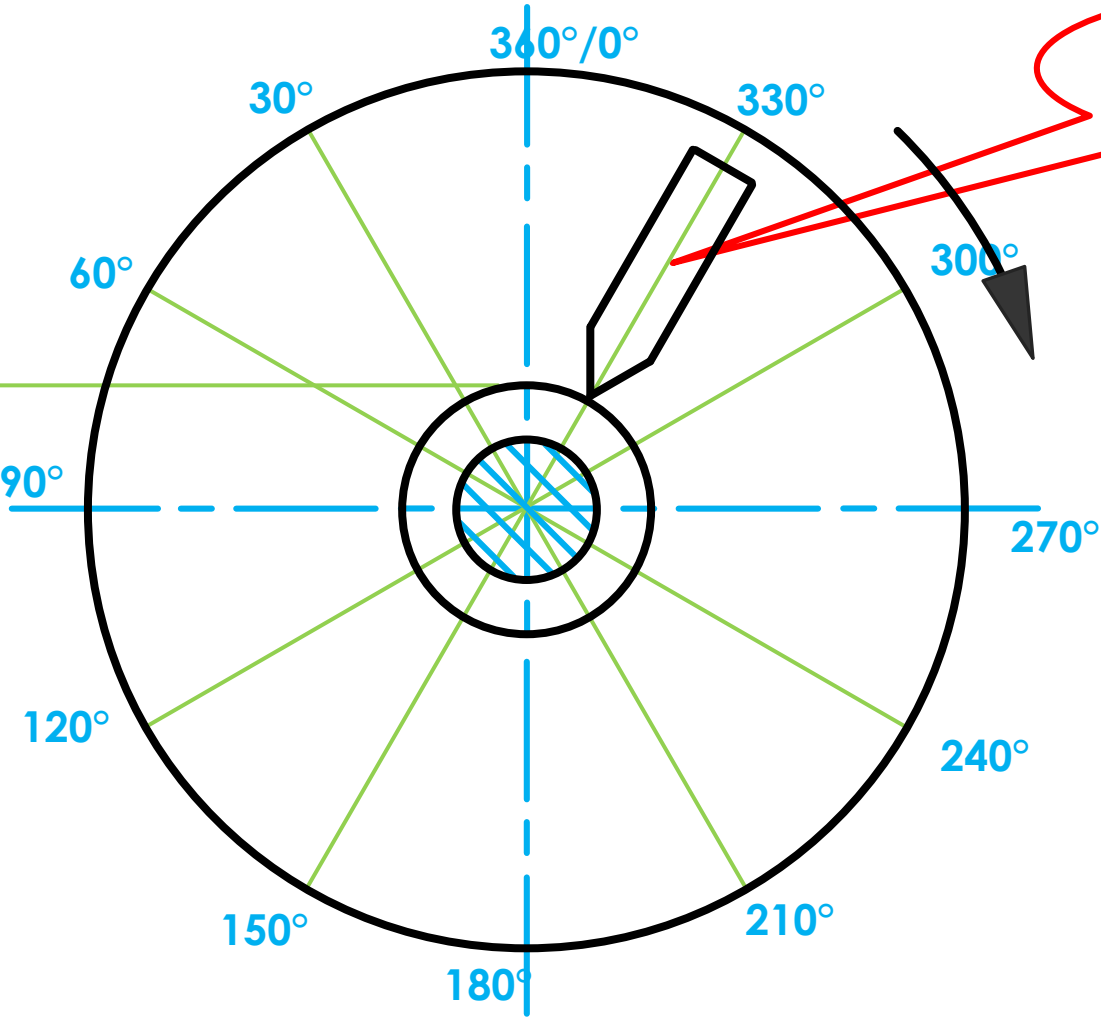
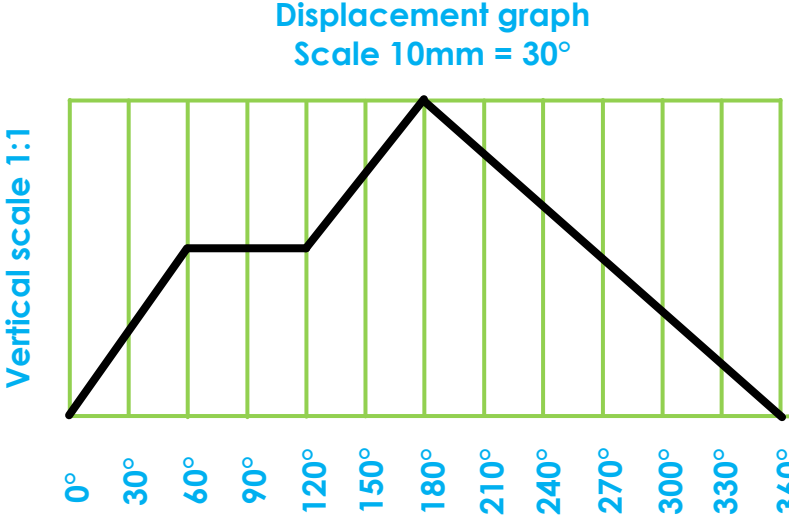
# Loci of a CAM: General information

- The follower can be at a vertical angle, slanted angle or horizontal angle.

# Loci of a CAM: General information



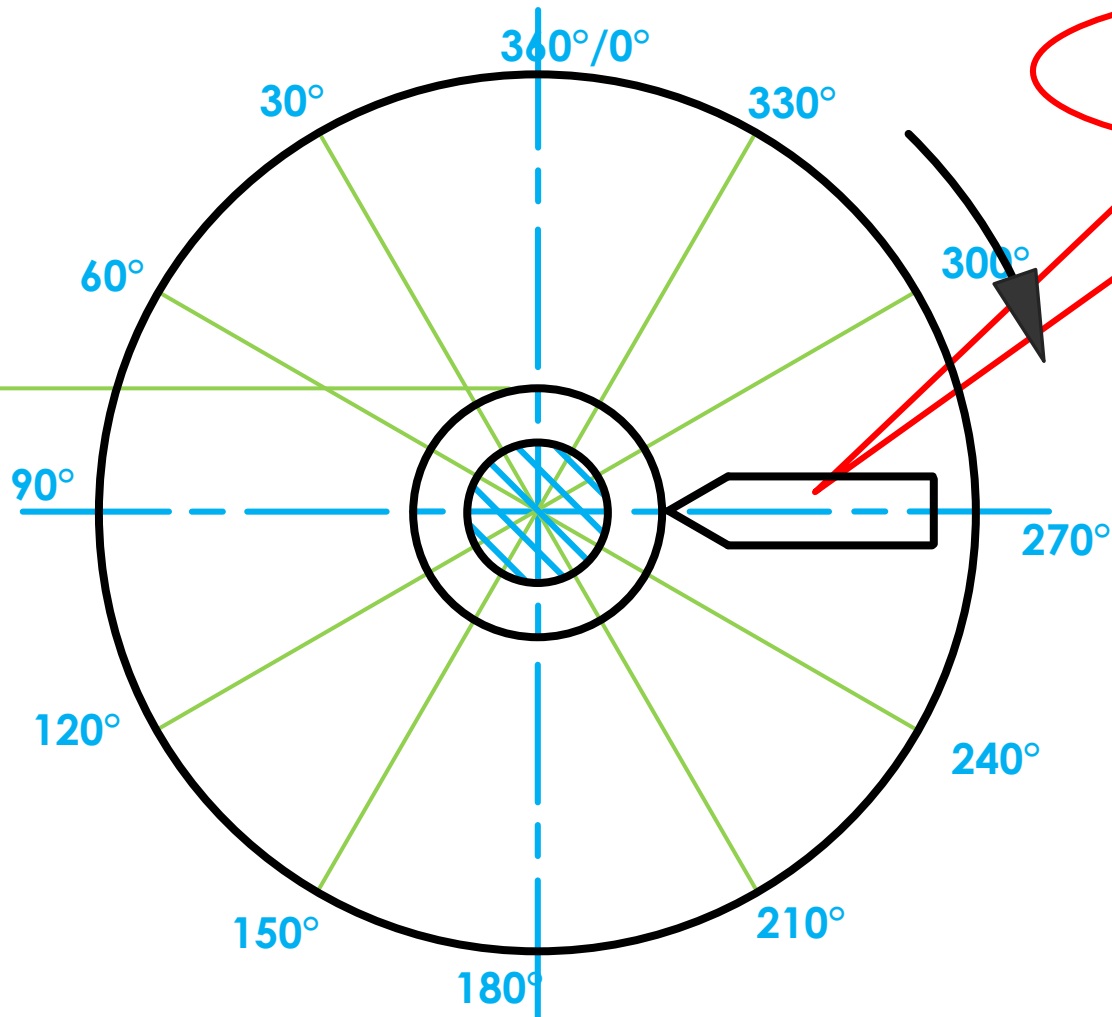
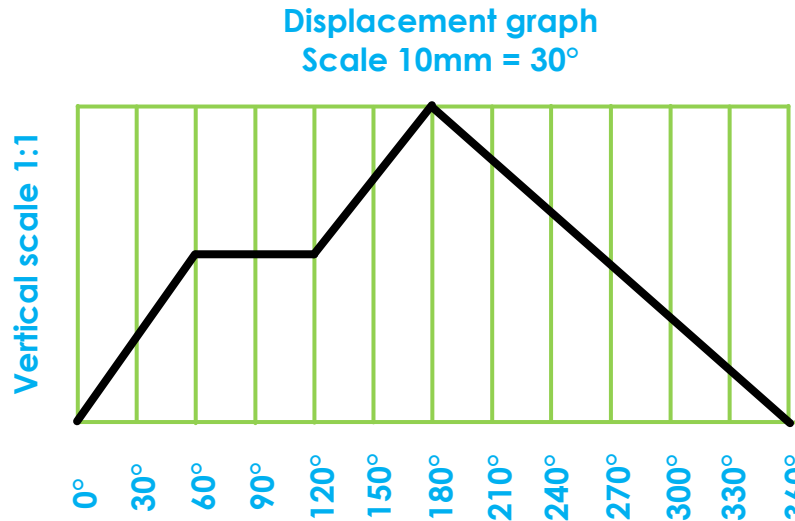
# Loci of a CAM: General information



Follower at a slanted angle

GRADE 12  
CONTENT

# Loci of a CAM: General information



Follower at a horizontal angle

GRADE 12  
CONTENT