

QUESTION 2a

LOCI
CAM

Given are the incomplete **displacement graph** (in position) and the starting point of a **wedge-ended follower** that reciprocates with **uniform velocity**. **Complete** the graph and then draw the **locus** of the cam to the following specifications:

- The direction of turn is **clockwise**.
- The **camshaft** has a diameter of 28 mm.
- For the first 60° the follower **falls** 20 mm (given).
- For the next 60° the follower is in **dwell**.
- For the next 60° the follower **falls** 25 mm.
- For the next 60° the follower is in **dwell**.
- For the next 30° the follower **falls** 15 mm.
- For the next 30° the follower **rises** 15 mm.
- For the next 15° the follower is in **dwell**.
- For the next 15° the follower **rises** 25 mm.
- For the next 15° the follower is in **dwell**.
- During the last 15° it **returns** to its **original position**.

Instructions:

- **Label** the **Displacement Graph**, **vertical** scale and **horizontal** scale.
- **Label** the **Cam Profile**.
- Indicate the **Direction**.
- Show all **constructions**.

Answer the following related questions:

- 2a.1 What is the **travel** after 180°? **45 mm**
2a.2 What is the **total travel**? **120 mm**
2a.3 What is the **displacement** after 300°? **45 mm**
2a.4 What is the **maximum displacement**? **60 mm**

ASSESSMENT CRITERIA

<input checked="" type="checkbox"/>	Complete graph	8
<input checked="" type="checkbox"/>	Plot Points	13
<input checked="" type="checkbox"/>	Locus	1
<input checked="" type="checkbox"/>	Hatch shaft	1
<input checked="" type="checkbox"/>	Direction	1
<input checked="" type="checkbox"/>	Labels	2
<input checked="" type="checkbox"/>	Answers	4
<input checked="" type="checkbox"/>	Lw/Acc/Pr.	-2

GPH	
PTS	
LOC	
HAT	
DIRE	
LAB	
ANS	
L/A/P	

30 MARKS

EXAMINATION NUMBER

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ANSWER SHEET 2a