

QUESTION 2: GEOMETRICAL CONSTRUCTION

Given:

Diagram sheet 2 (page 3) shows a representation of a headlight of a vehicle with the necessary dimensions.

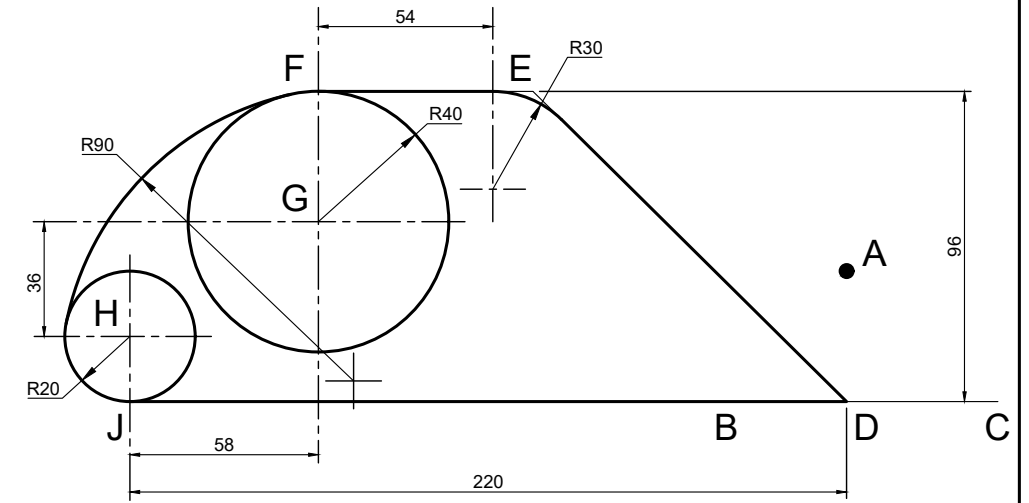
Instructions:

Use the given sketch on diagram sheet 2 with point A as the starting position and with a scale of 1:1, construct by means of your drawing equipment the following:

- 1.1. A perpendicular line as a construction line from point A to line segment BC and name the intersection point through BC, D.
- 1.2. By means of construction, bisect the angle ADB and draw the line as a centre line (medium chain line). Extend the line to a perpendicular height of 96 mm from point D. Name this line DE.
- 1.3. By means of your T-square, draw a dashed thin line (short dashed or hidden detail outline), 45 mm in length to the left and name this line EF.
- 1.4. Determine the start positions and by means of your compass, construct and name circle G (R40 mm) and circle H (R20 mm) as a continuous thick (visible outline) line quality.
- 1.5. By means of your T-square, join point D with a tangent as a continuous thin (construction line) to the bottom of circle H and name the intersection point J.
- 1.6. By means of construction, divide line segment DJ in 6 equal parts. Show all construction lines and name each divide line from 1 to 6.
- 1.7. Construct a fillet as a continuous thick (visible outline) line with a radius of 30 mm between line segment DE and EF.
- 1.8. Construct an external arc as a continuous thick (visible outline) line with a radius of 90 mm to circles G & H, including last mentioned circles with the external arc.

Note:

- Show ALL construction lines.
- Show ALL calculation.



[40]

ASSESSMENT CRITERIA

Criteria	Score	Mark	Percentage
1.1 Perpendicular A to BC (D)	6		
1.2 Bisecting DE	6		
1.3 Line EF	3		
1.4 Circles G & H	6		
1.5 Line DJ	3		
1.6 Dividing line segment DJ ($\frac{12}{2}$)	6		
1.7 Tangent circle to two lines ($\frac{6}{2}$)	3		
1.8 External arc	7		
TOTAL	40		

CALCULATIONS

CIRCLE G	CIRCLE H

