



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P2

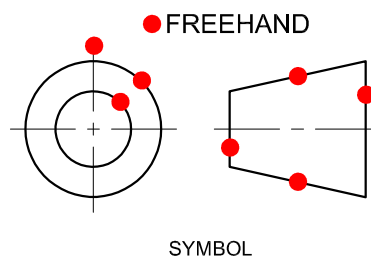
NOVEMBER 2019

MARKING GUIDELINES

MARKS: 100

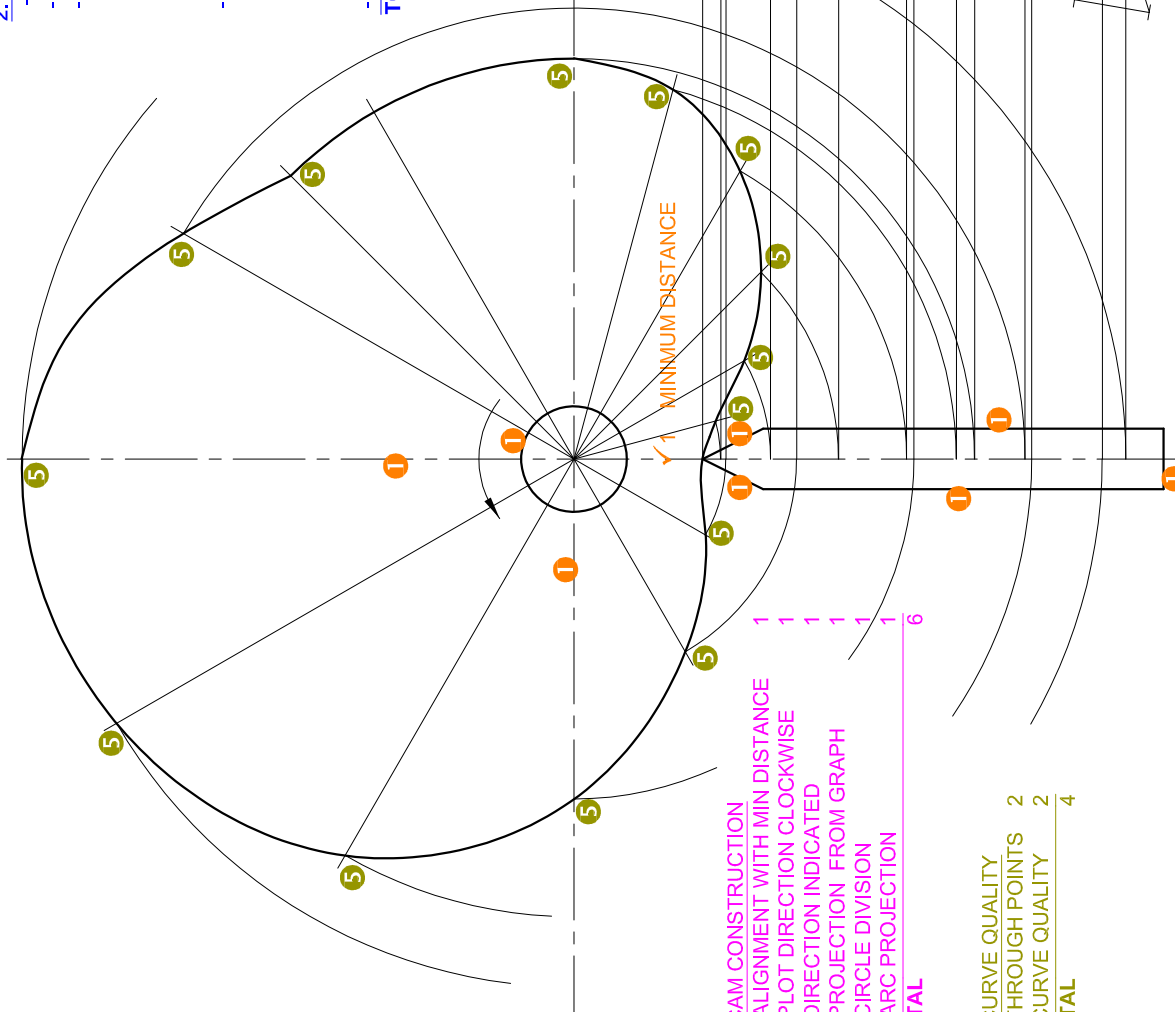
These marking guidelines consist of 6 pages.

ANSWERS			
1	TO CHECK THE DRAWING	1	
2	www.foundry.co.za	1	
3	MJIG-12-V5	1	
4	JR MANUFACTURES	1	
5	30	1	
6	SECTIONAL FRONT VIEW ON T-T	2	
7	REMOVED SECTION	1	
8	OFFSET or MULTI-PLANE	1	
9	A: R4 B: 15 C: 12 D: 84 E: $\varnothing 7$	5	
10	199	1	
11	WEB or RIB	1	
12	18 mm	1	
13	COUNTER BORE	1	
14	8	1	
15	HATCHING IN OPPOSITE DIRECTIONS	2	
16	30.85	1	
17	DIRECTION OF LAY	d	4
	ROUGHNESS VALUE	a	
	SAMPLING LENGTH	c	
	MACHINING ALLOWANCE	e	
18	<i>See below</i>	4	
TOTAL		30	

ANSWER 18

ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CENTRE LINES	5
2	GRAPH CONSTRUCTION	7
3	DISPLACEMENT GRAPH	9
4	CAM CONSTRUCTION	6
5	CAM + CURVE QUALITY	11
TOTAL		38

- 2. GRAPH CONSTRUCTION**
- BASE LENGTH 96 mm
 - 12 DIVISIONS @ 8 mm
 - UNIFORM ACCELERATION + RETARDATION
- * HEIGHT 56 mm
- * LINE DIVISION
- * FIRST $\frac{1}{2}$ CONSTRUCTION
- * SECOND $\frac{1}{2}$ CONSTRUCTION
- SIMPLE HARMONIC MOTION
- * SEMI CIRCLE
 - * CIRCLE DIVISION
 - * 15° SUBDIVISIONS
 - * PROJECTION
 - LABELS
- TOTAL** 7

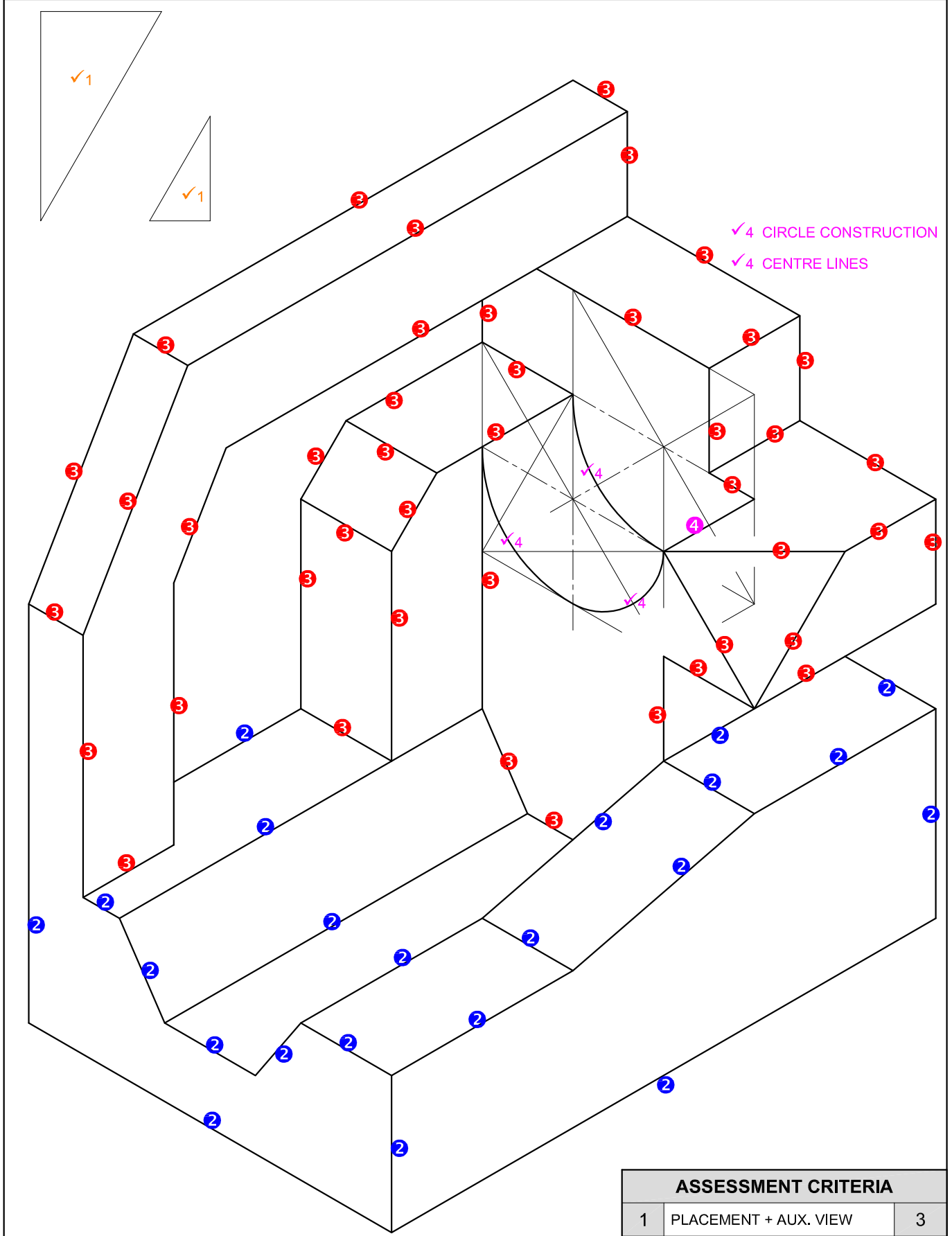


- 4. CAM CONSTRUCTION**
- ALIGNMENT WITH MIN DISTANCE 1
 - PLOT DIRECTION CLOCKWISE 1
 - DIRECTION INDICATED 1
 - PROJECTION FROM GRAPH 1
 - CIRCLE DIVISION 1
 - ARC PROJECTION 1
- TOTAL** 6

- 5. CURVE QUALITY**
- THROUGH POINTS 2
 - CURVE QUALITY 2
- TOTAL** 4

DISPLACEMENT GRAPH
SCALE 30° = 8 mm

PAPER 2 QUESTION 2
GRADE 12
NSC 2019
MARKING GUIDELINES

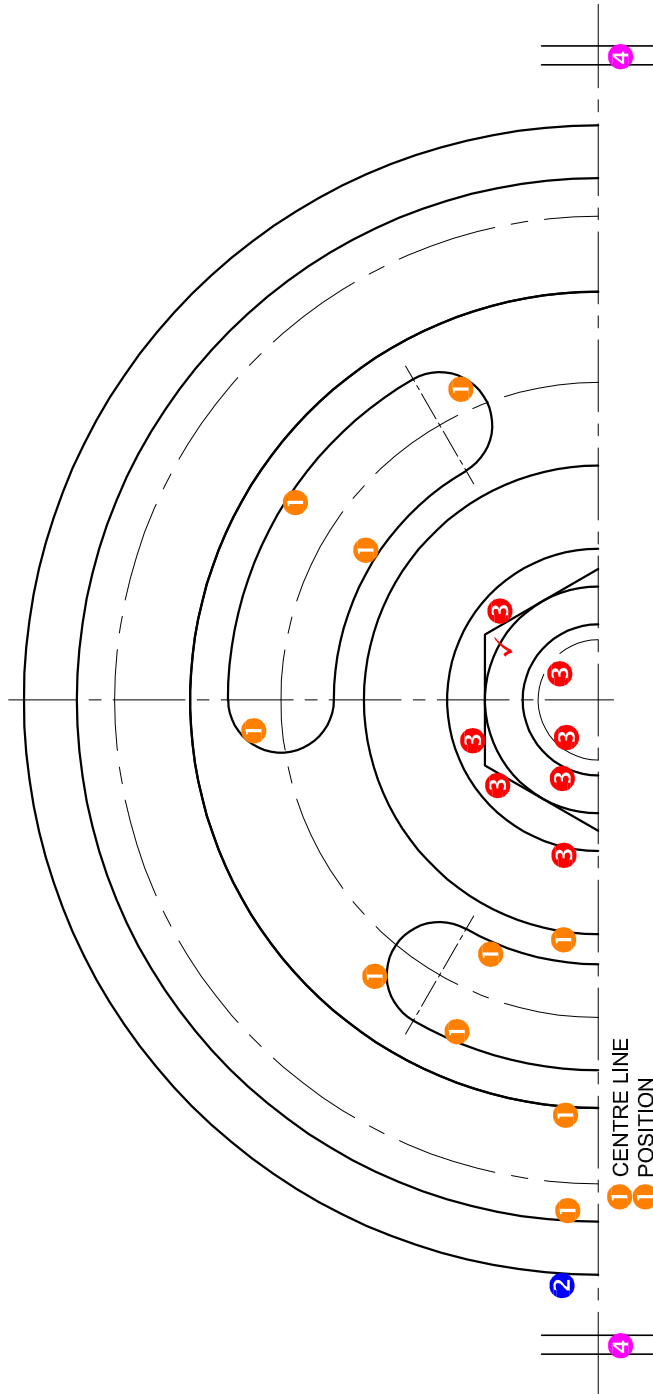


✓1 CORRECT PLACEMENT

✓4 CIRCLE CONSTRUCTION
✓4 CENTRE LINES

PAPER 2 QUESTION 3
GRADE 12
NSC 2019
MARKING GUIDELINES

ASSESSMENT CRITERIA		
1	PLACEMENT + AUX. VIEW	3
2	FRONT PORTION	11
3	BACK PORTION	21 ¹ / ₂
4	CIRCLE + CIRCLE CONSTRUCTION + CL	5 ¹ / ₂
TOTAL		41



ASSESSMENT CRITERIA		
TOP VIEW		
1	GEAR	6
2	COLLAR PLATE	1 1/2
3	M20 NUT + WASHER	4 1/2
4	SYMMETRY	1
SUBTOTAL		12

PAPER 2 QUESTION 4
 GRADE 12
 NSC 2019
 MARKING GUIDELINES

HEIGHT 8

CONVENTION CL

NUT + WASHER NOT HATCHED

CONVENTION CL

SHAFT NOT HATCHED

CENTRE LINE/ NOT SOLID LINE

PLUG NOT HATCHED

SCREW NOT HATCHED

PAPER 2 QUESTION 4
GRADE 12
NSC 2019
MARKING GUIDELINES

ASSESSMENT CRITERIA		SECTIONAL FRONT VIEW
1	SUMP	16 1/2
2	PLUG	7
3	COLLAR PLATE	4 1/2
4	BUSH	3
5	COLLAR + PIN	5
6	SHAFT	9 1/2
7	GEAR	10
8	M20 NUT + WASHER	6 1/2
9	M8 SCREW	6
SUBTOTAL		68

CENTRE LINE MARK ALLOCATION
SANS COMPLIANT 1
8 CENTRE LINES 2
TOTAL 3