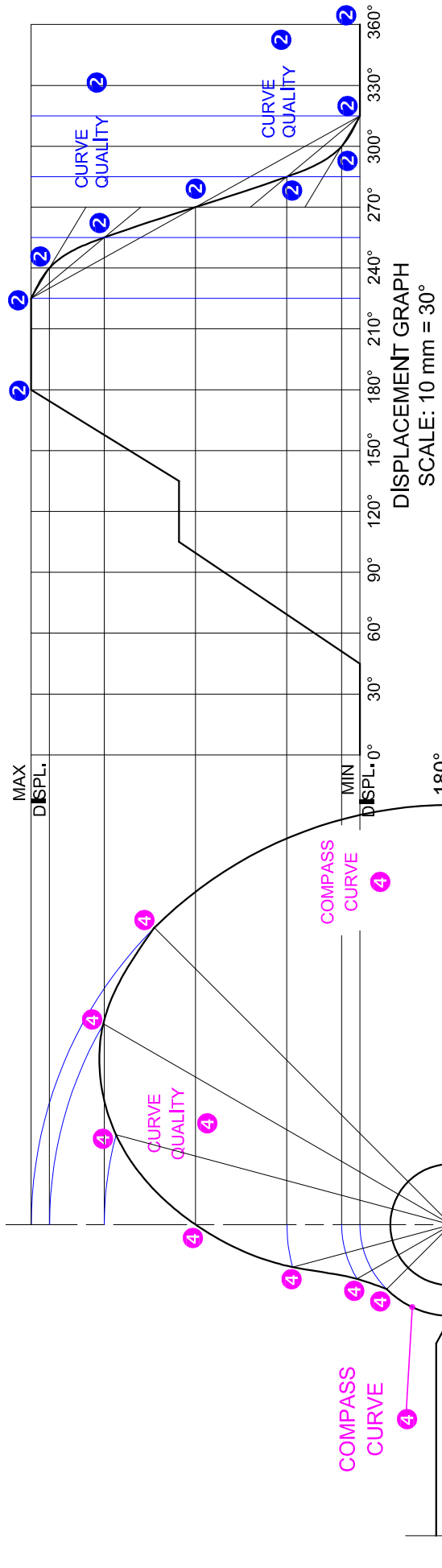


ASSESSMENT CRITERIA 2.1	
1	GIVEN 6
2	CONSTRUCTION 3
3	POINTS + CURVE 10
<b>SUBTOTAL 2.1 19</b>	

PAPER 2 QUESTION 2.1  
 GRADE 12  
 NOVEMBER 2023  
 MARKING GUIDELINES



- 1 GRAPH CONSTRUCTION**
- LENGTH (60 mm) 1
  - 6 DIVISIONS 1
- UNIFORM ACCEL. + RETARDATION**
- (15° DIV  $\frac{1}{2}$  \* 6 x DIV  $\frac{1}{2}$  CONSTR  $\frac{1}{2}$ ) 2
  - 2 x LABELS  $\frac{1}{5}$

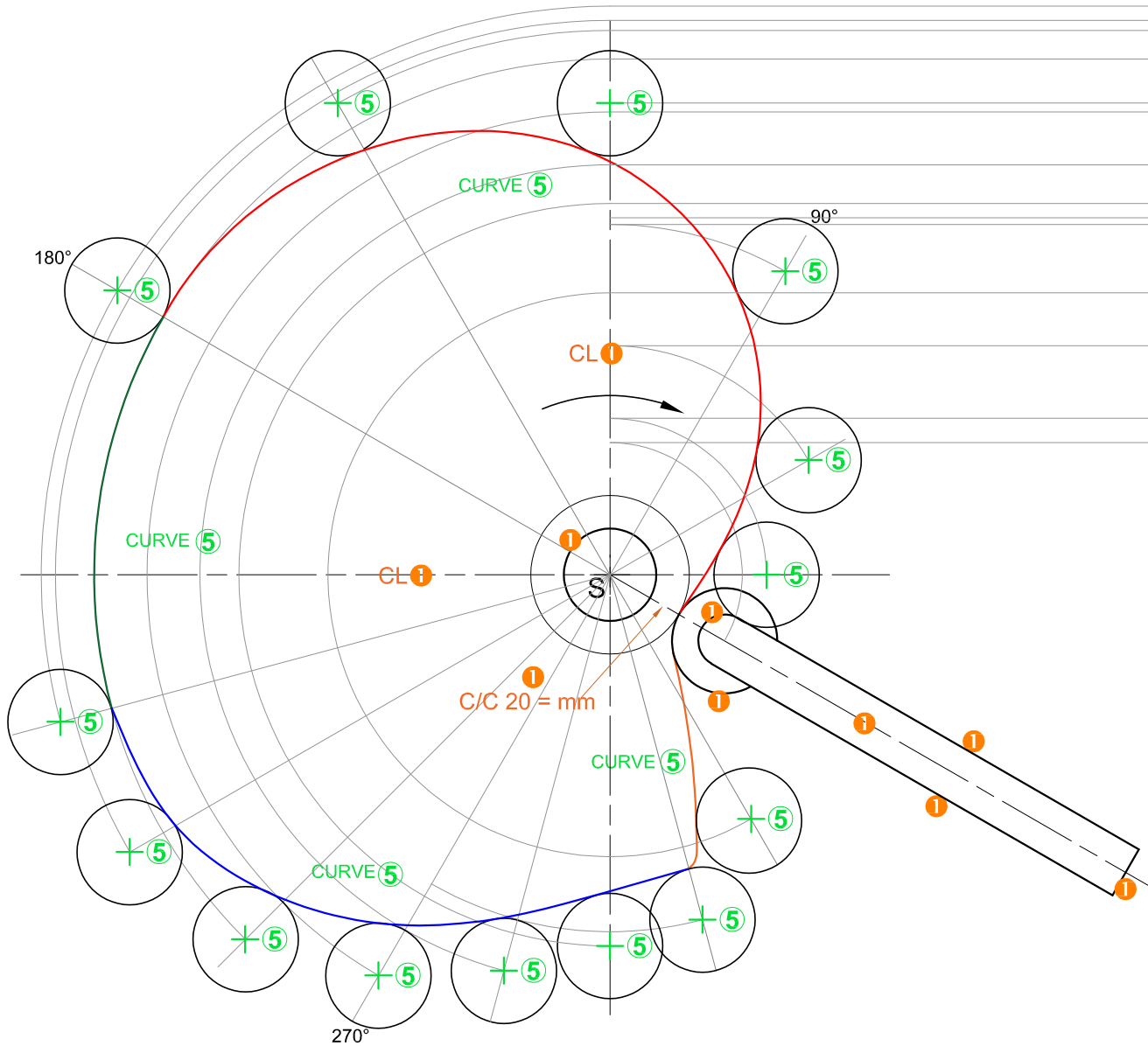
- 3 CAM CONSTRUCTION**
- CIRCLE DIVISION 1
  - PROJECT FROM GRAPH 1
  - ARC PROJECTIONS 1
  - TOTAL 3

ASSESSMENT CRITERIA 2.2	
1	GRAPH CONSTRUCTION 5
2	PLOTTING GRAPH 5 $\frac{1}{2}$
3	CAM CONSTRUCTION 3
4	CAM + CURVE QUALITY 5 $\frac{1}{2}$
<b>SUBTOTAL 2.2 19</b>	

PAPER 2 QUESTION 2.2  
 GRADE 12  
 NOVEMBER 2023  
 MARKING GUIDELINES

**5. CAM PROFILE**

- 14 CENTRE POINTS	7
- ROLLERS	2
- POINTS OF TANGENCY	2
- CURVE TANGENT TO GIVEN FOLLOWER	0,5
- CURVE QUALITY (4 x ½)	2
<b>TOTAL</b>	<b>13 ½</b>

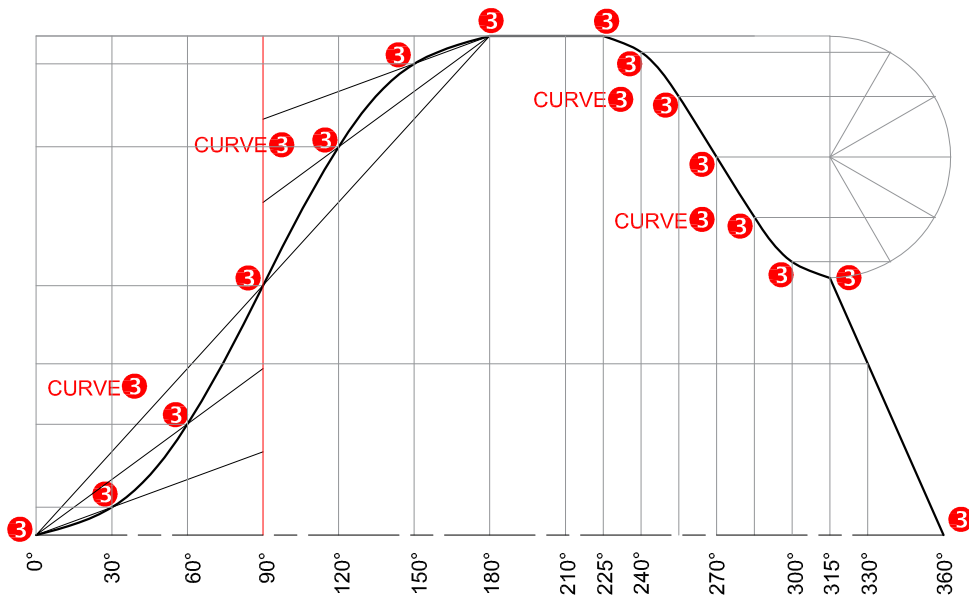


**4. CAM CONSTRUCTION**

- PROJECTION / TRANSFERRING FROM GRAPH	1
- CIRCLE DIVISION	1
- ARC PROJECTION / TRANSFER	1
- PLOT DIRECTION (ANTI-CLOCKWISE)	1
- ARROW (CLOCKWISE)	1
<b>TOTAL</b>	<b>5</b>

ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CL	5
4	CAM CONSTRUCTION + ARROW	5
5	PLOTTING + CAM PROFILE	13 ½
<b>TOTAL</b>		<b>23 ½</b>

PAPER 2 QUESTION 2  
 GRADE 12  
 JUNE 2023  
 MARKING GUIDELINE



**DISPLACEMENT GRAPH 2**

**2. GRAPH CONSTRUCTION**

- LENGTH (120) 1
  - 12 EQUAL DIVISION 1
- TOTAL 2

**2. UNIFORM ACCELERATION + RETARDATION CONSTRUCTION**

- VERTICAL DIVISION 0.5
  - 1st HALF 0.5
  - 2nd HALF 0.5
- TOTAL 1½

**2. SIMPLE HARMONIC MOTION CONSTRUCTION**

- SEMI CIRCLE 0.5
  - CIRCLE DIVISION 0.5
  - ADDITIONAL 15° DIVISIONS 0.5
  - PROJECTION 0.5
- TOTAL 2

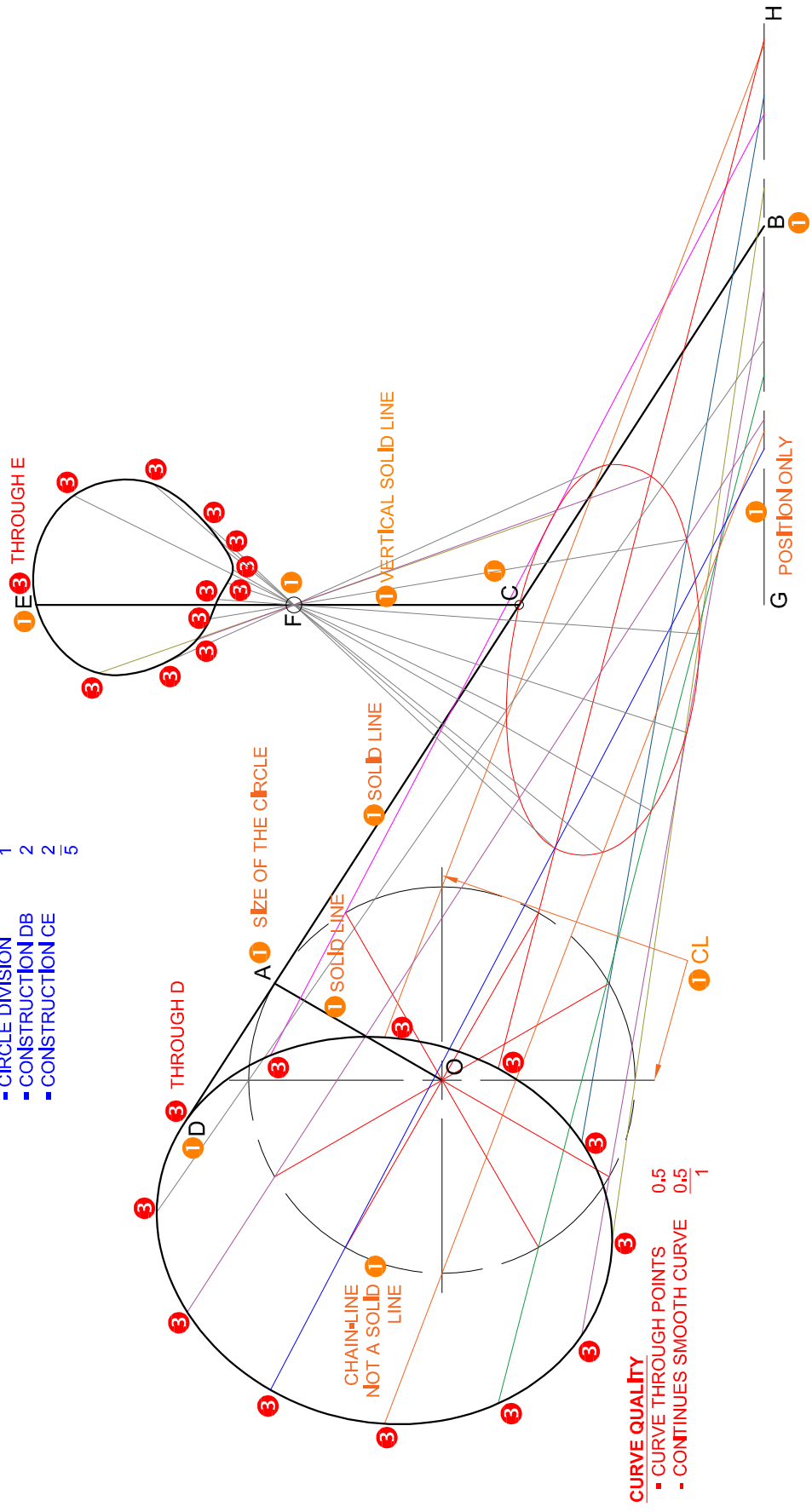
ASSESSMENT CRITERIA		
2	GRAPH CONSTRUCTION + LABELS	6
3	PLOTTING GRAPH + GRAPH CURVES	9½
<b>TOTAL</b>		<b>15½</b>

PAPER 2 QUESTION 2  
 GRADE 12  
 JUNE 2023  
 MARKING GUIDELINE

ASSESSMENT CRITERIA 2.1	
1	GIVEN + LABELS + CL 6
2	CONSTRUCTION 5
3	LOC OF D + E 14
<b>SUBTOTAL 2.1 25</b>	

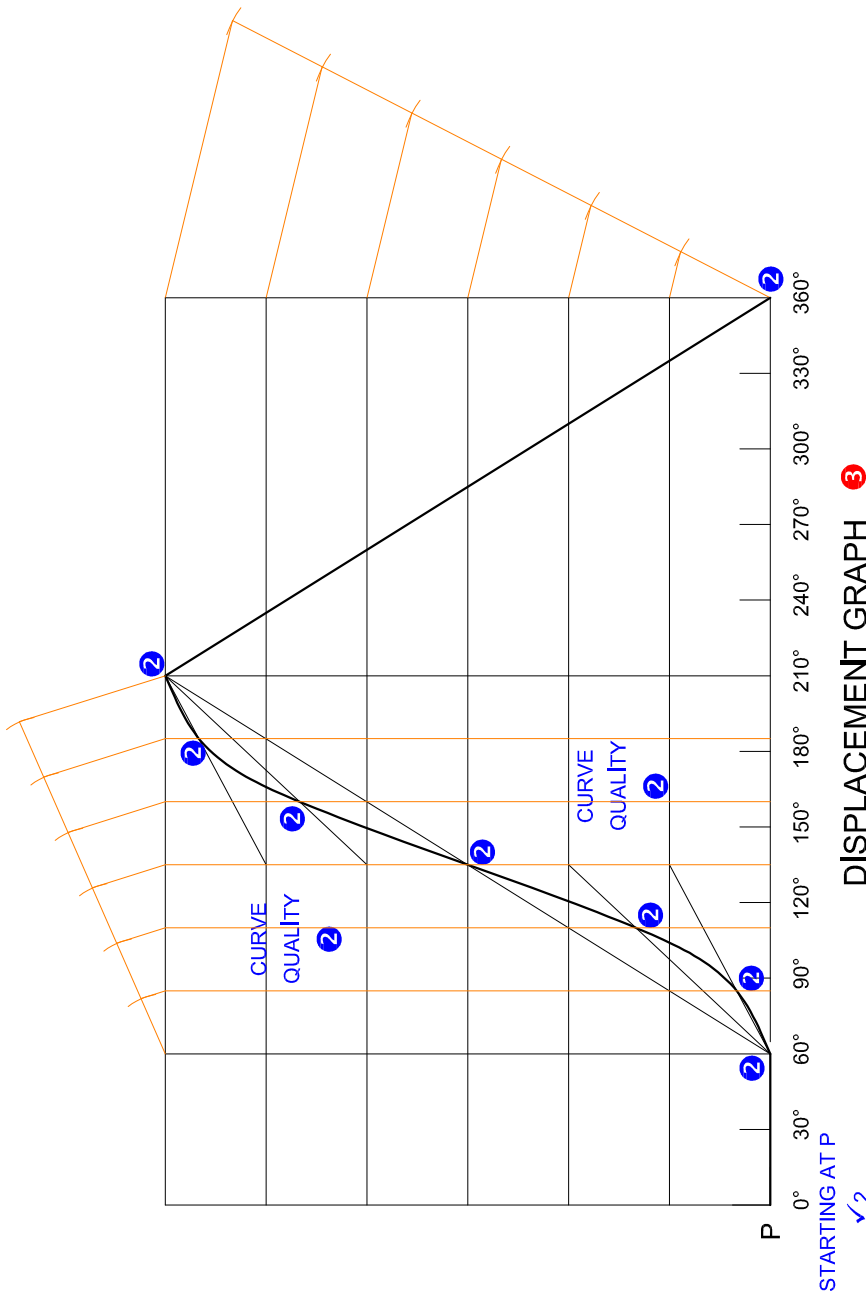
**CURVE QUALITY**  
 - CURVE THROUGH POINTS 0.5  
 - CONTINUES SMOOTH CURVE 0.5  
 1

**2. CONSTRUCTION**  
 - CIRCLE DIVISION 1  
 - CONSTRUCTION DB 2  
 - CONSTRUCTION CE 5



**CURVE QUALITY**  
 - CURVE THROUGH POINTS 0.5  
 - CONTINUES SMOOTH CURVE 0.5  
 1

PAPER 2 QUESTION 2  
 GRADE 12  
 NOVEMBER 2022  
 MARKING GUIDELINE



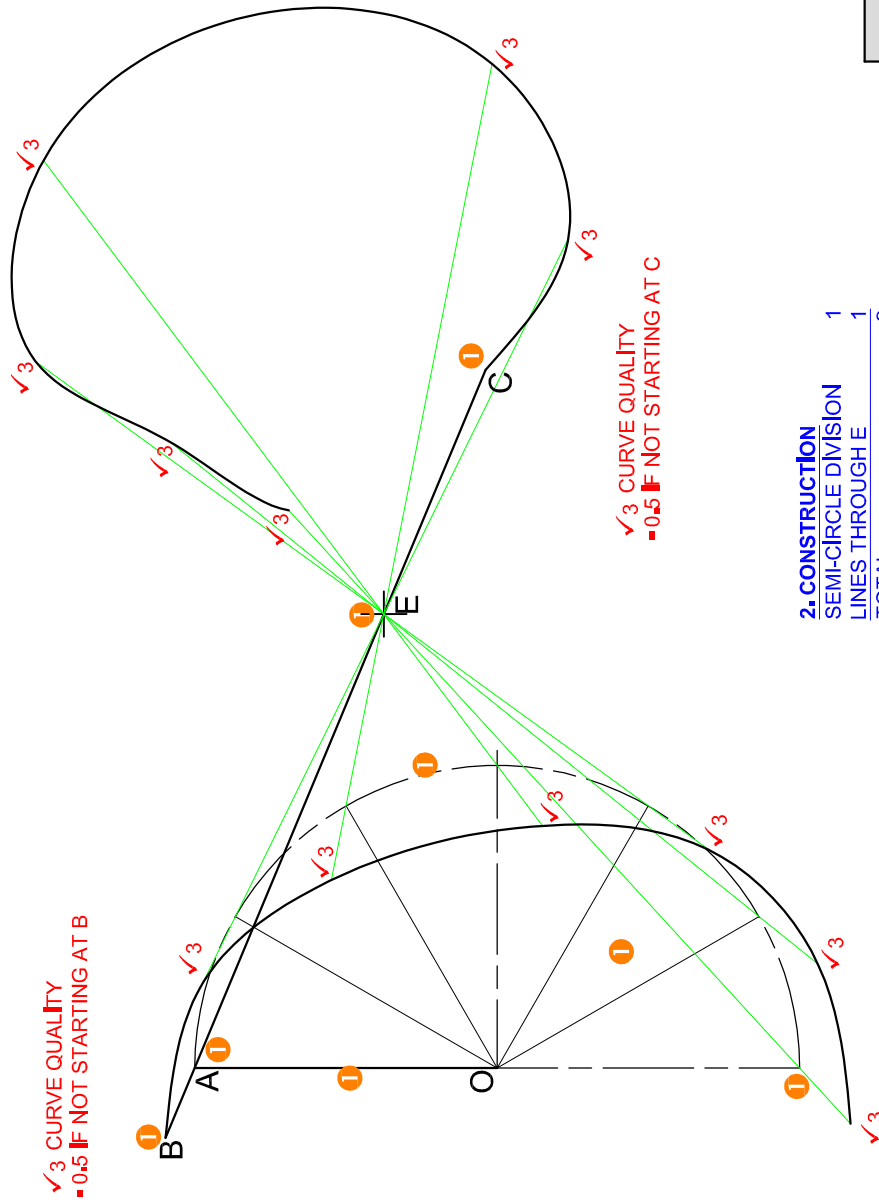
**DISPLACEMENT GRAPH** 3  
**SCALE 10 mm = 30°** 3

1. CONSTRUCTION
- LENGTH 120 + LINE DIVISIONS (1 + 1/2) 1
  - 150° HORIZONTAL LINE DIVISION for UAR 1
  - VERTICAL DIVISIONS for UAR 1
  - (hor / vert. division number must be equal)
  - FIRST HALF CONSTRUCTION for UAR 1
  - SECOND HALF CONSTRUCTION for UAR 5

**NOTE ON CURVE QUALITY**  
 MUST BE THROUGH DETERMINED  
 POINTS, & CURVE MUST BE  
 CONTINUOUS AND SMOOTH

ASSESSMENT CRITERIA 2.2	
1	GRAPH CONSTRUCTION 5
2	POINTS + CURVE 6
3	LABELS 1
<b>SUBTOTAL 2.2 12</b>	

PAPER 2 QUESTION 2  
 GRADE 12  
 NOVEMBER 2022  
 MARKING GUIDELINE



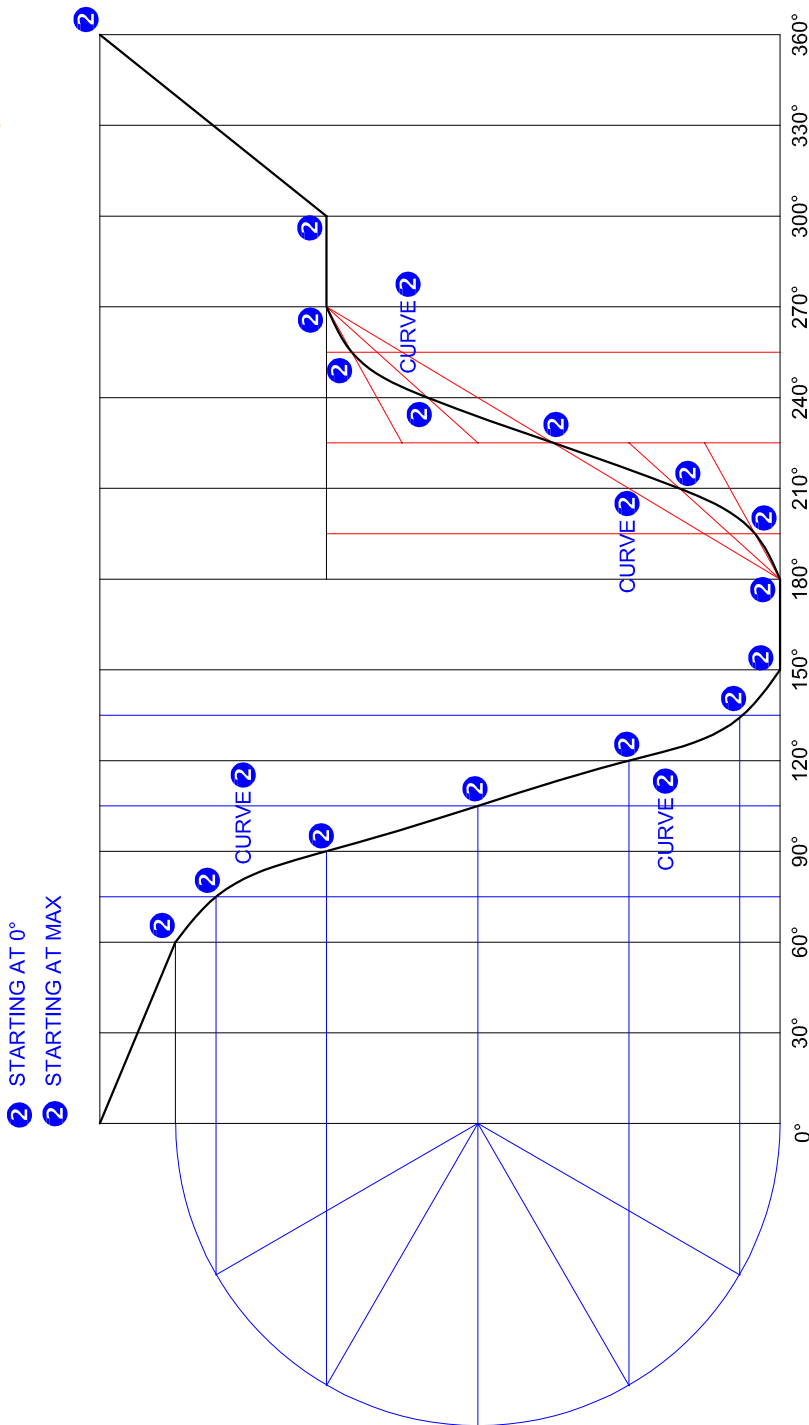
2. CONSTRUCTION  
 SEMI-CIRCLE DIVISION 1  
 LINES THROUGH E 1  
 TOTAL 2

ASSESSMENT CRITERIA 2.1	
1	GIVEN 4
2	CONSTRUCTION 2
3	POINTS + CURVE 14
<b>TOTAL 20</b>	

- 1. CONSTRUCTION OF GRAPH**
- LENGTH (144) 1
  - LINE DIVISION 1
- TOTAL 2

- 1. CONSTRUCTION OF SIMPLE HARMONIC MOTION**
- SEMI CIRCLE 0.5
  - CIRCLE DIVISION 0.5
  - ADDITIONAL 15° DIVISIONS 0.5
  - HORIZONTAL PROJECTION 0.5
- TOTAL 2

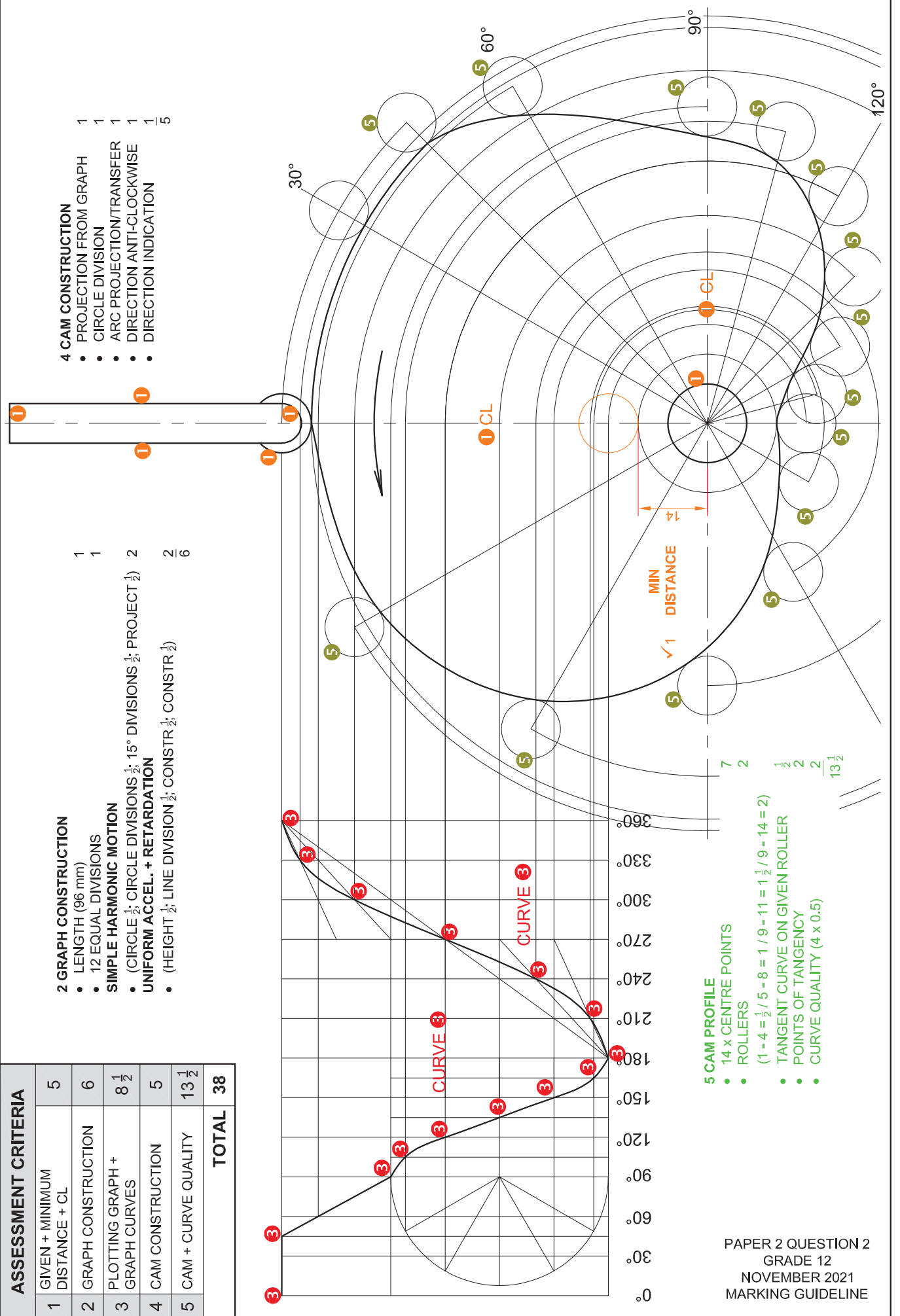
- 1. CONSTRUCTION OF UNIFORM ACCELERATION + RETARDATION**
- ADDITIONAL 15° DIVISIONS 0.5
  - VERTICAL DIVISION 0.5
  - 1st HALF 0.5
  - 2nd HALF 0.5
- TOTAL 2



- ② STARTING AT 0°
- ② STARTING AT MAX

**DISPLACEMENT GRAPH 3**  
**SCALE: 144 mm = 360° ROTATION 3**

ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION 6
2	POINTS + CURVE 11
3	LABELS 1
<b>TOTAL 18</b>	



ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CL	5
2	GRAPH CONSTRUCTION	6
3	PLOTTING GRAPH + GRAPH CURVES	8 1/2
4	CAM CONSTRUCTION	5
5	CAM + CURVE QUALITY	13 1/2
<b>TOTAL</b>		<b>38</b>

- 4 CAM CONSTRUCTION**
- PROJECTION FROM GRAPH 1
  - CIRCLE DIVISION 1
  - ARC PROJECTION/TRANSFER 1
  - DIRECTION ANTI-CLOCKWISE 1
  - DIRECTION INDICATION 1

- 2 GRAPH CONSTRUCTION**
- LENGTH (96 mm) 1
  - 12 EQUAL DIVISIONS 1
- SIMPLE HARMONIC MOTION**
- (CIRCLE 1/2; CIRCLE DIVISIONS 1/2; 15° DIVISIONS 1/2; PROJECT 1/2) 2
- UNIFORM ACCEL. + RETARDATION**
- (HEIGHT 1/2; LINE DIVISION 1/2; CONSTR 1/2; CONSTR 1/2) 2

- 5 CAM PROFILE**
- 14 x CENTRE POINTS 7
  - ROLLERS 2
  - TANGENT CURVE ON GIVEN ROLLER (1 - 4 = 1/2 / 5 - 8 = 1 / 9 - 11 = 1 1/2 / 9 - 14 = 2) 1 1/2
  - POINTS OF TANGENCY 2
  - CURVE QUALITY (4 x 0.5) 2
- 13 1/2

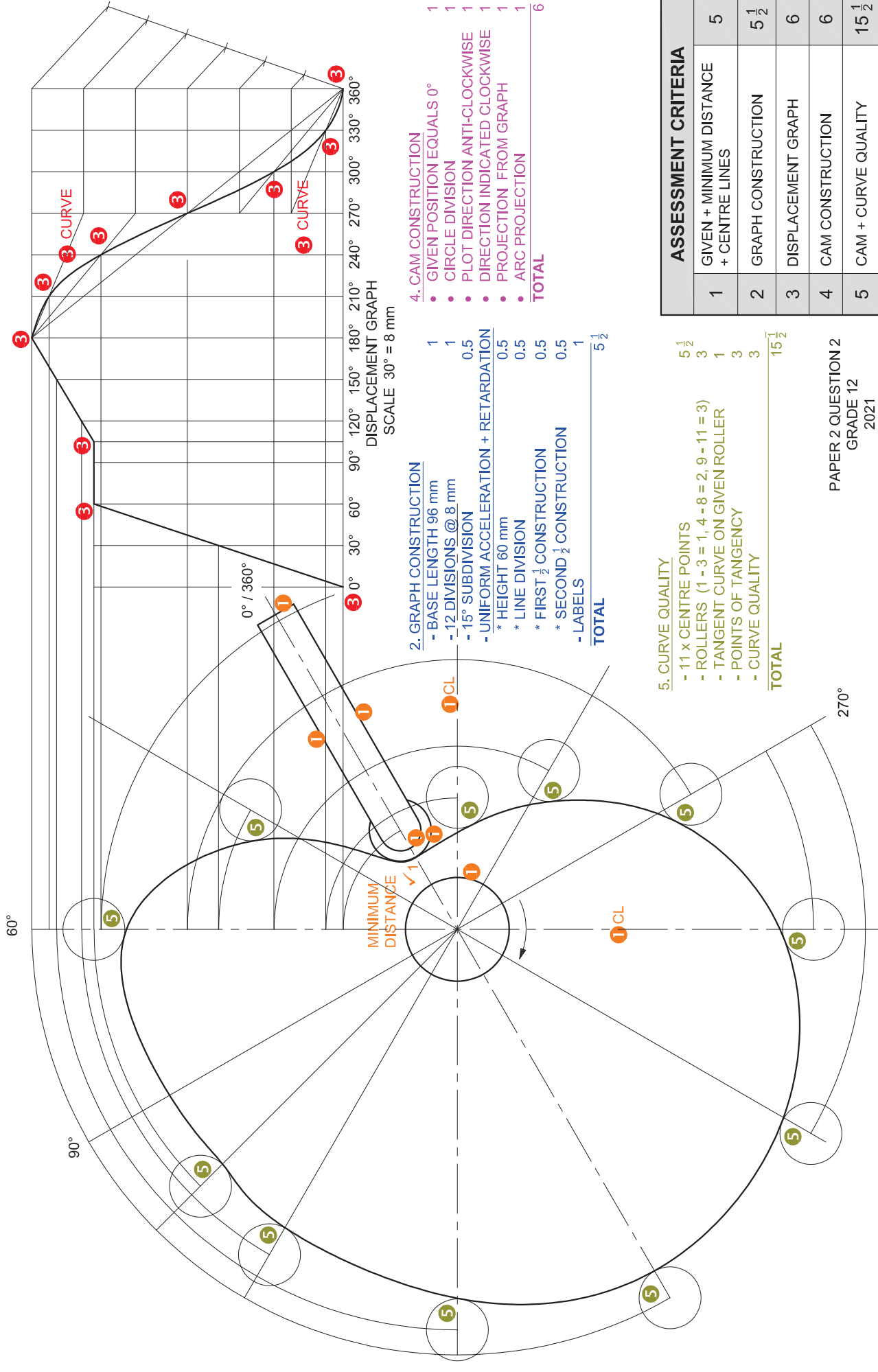
PAPER 2 QUESTION 2  
 GRADE 12  
 NOVEMBER 2021  
 MARKING GUIDELINE

# ENGINEERING GRAPHICS AND DESIGN

## PAPER 2

### ANSWER 2 MG

1		Jun 2021 MG	p1, 2
2	Nov 2020 MG	Nov 2020 MG	p3, 4
3	Nov 2019 MG	Jun 2019 MG	p5, 6
4	Jun 2019 MG	Nov 2018 MG	p7, 8
5	Nov 2018 MG	Jun 2018 MG	p9, 10
6	Jun 2018 MG	Nov 2017 MG	p11, 12
7	Jun 2017 MG	Supp 2017 MG	p13, 14
8	Supp 2017 MG	Nov 2016 MG	p15, 16
9	Nov 2016 MG	Supp 2016 MG	p17, 18
10	Supp 2015 MG	Nov 2015 MG	p19, 20
11	Nov 2015 MG	Nov 2014 MG	p21, 22
12	Nov 2014 MG	Exemplar 2014 MG	p23, 24
13	Supp 2014 MG	Nov 2013 MG	p25, 26
14	Nov 2013 MG	Supp 2013 MG	p27, 28
15	Supp 2013 MG	Nov 2012 MG	p29, 30
16	Nov 2012 MG	Supp 2012 MG	p31, 32
17	Supp 2012 MG	Nov 2011 MG	p33, 34
18	Nov 2011 MG	Supp 2011 MG	p35, 36
19	Nov 2010 MG	Supp 2010 MG	p37, 38
20	Nov 2009 MG	Supp 2009 MG	p39, 40
21	Nov 2008 MG	Exemplar 2008 MG	p41, 42



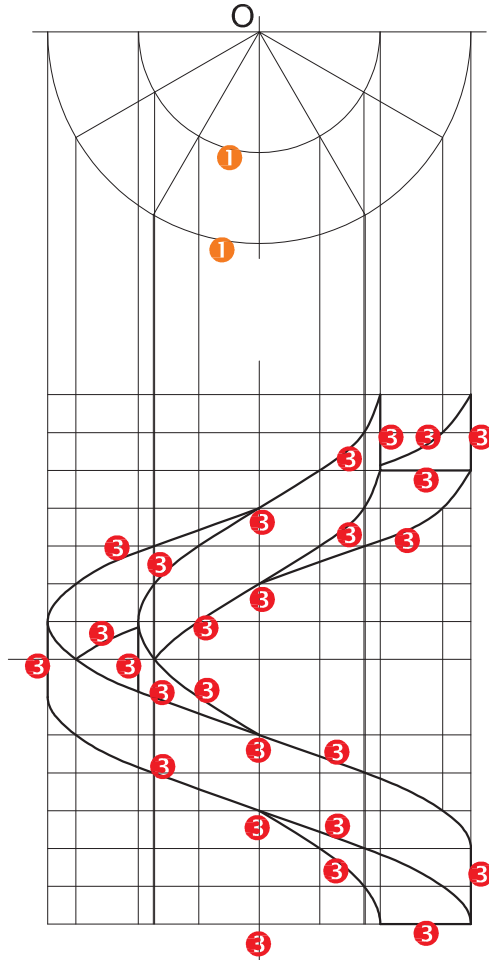
- 2. GRAPH CONSTRUCTION**
- BASE LENGTH 96 mm
  - 12 DIVISIONS @ 8 mm
  - 15° SUBDIVISION
  - UNIFORM ACCELERATION + RETARDATION
- \* HEIGHT 60 mm  
 \* LINE DIVISION  
 \* FIRST 1/2 CONSTRUCTION  
 \* SECOND 1/2 CONSTRUCTION  
 - LABELS
- TOTAL** 5 1/2

- 4. CAM CONSTRUCTION**
- GIVEN POSITION EQUALS 0°
  - CIRCLE DIVISION
  - PLOT DIRECTION ANTI-CLOCKWISE
  - DIRECTION INDICATED CLOCKWISE
  - PROJECTION FROM GRAPH
  - ARC PROJECTION
- TOTAL** 6

- 5. CURVE QUALITY**
- 11 x CENTRE POINTS
  - ROLLERS (1 - 3 = 1, 4 - 8 = 2, 9 - 11 = 3)
  - TANGENT CURVE ON GIVEN ROLLER
  - POINTS OF TANGENCY
  - CURVE QUALITY
- TOTAL** 15 1/2

ASSESSMENT CRITERIA	
1	GIVEN + MINIMUM DISTANCE + CENTRE LINES 5
2	GRAPH CONSTRUCTION 5 1/2
3	DISPLACEMENT GRAPH 6
4	CAM CONSTRUCTION 6
5	CAM + CURVE QUALITY 15 1/2
<b>TOTAL 38</b>	

PAPER 2 QUESTION 2  
 GRADE 12  
 2021  
 MARKING GUIDELINES



**2. CONSTRUCTIONS**

- CIRCLE DIVISIONS 0.5
- PITCH 0.5
- PITCH DIVISIONS 1
- VERTICAL PROJECTION 1
- HORIZONTAL PROJECTION 1
- DIRECTION 2
- 6**

**4. CURVE QUALITY**

- CURVE THROUGH POINTS 1
- CURVE CONTINUOUS / SMOOTH 1
- 2**

ASSESSMENT CRITERIA 2.1		
1	GIVEN + CL	1
2	CONSTRUCTION	6
3	HELIX	13
4	CURVE QUALITY	2
<b>TOTAL</b>		<b>22</b>

PAPER 2 QUESTION 2.1  
 GRADE 12  
 SC/NSC 2020  
 MARKING GUIDELINE

**1. CONSTRUCTIONS**

- LENGTH : 120 mm 0.5
- 12 DIVISIONS 0.5

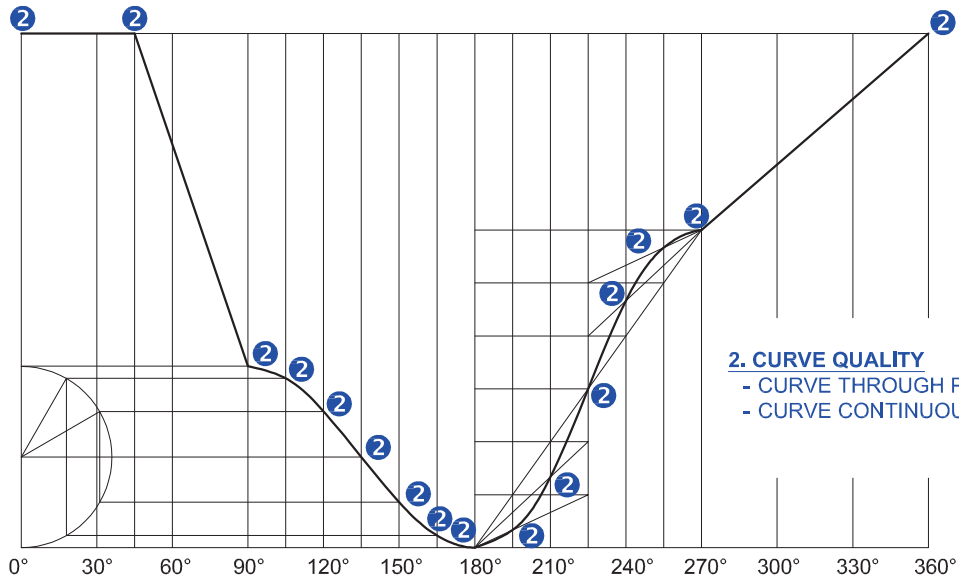
**SIMPLE HARMONIC**

- 15° SUBDIVISIONS 0.5
- SEMI CIRCLE 0.5
- CIRCLE DIVISION 0.5
- HORIZONTAL PROJECTION 0.5

**UNIFORM ACCELERATION & RETARDATION**

- 15° SUBDIVISIONS 0.5
- LINE DIVISION 0.5
- FIRST HALF CONSTRUCTION 0.5
- SECOND HALF CONSTRUCTION 0.5

**LABELING** 1  
6



**2. CURVE QUALITY**

- CURVE THROUGH POINTS 0.5
- CURVE CONTINUOUS / SMOOTH 0.5  
1

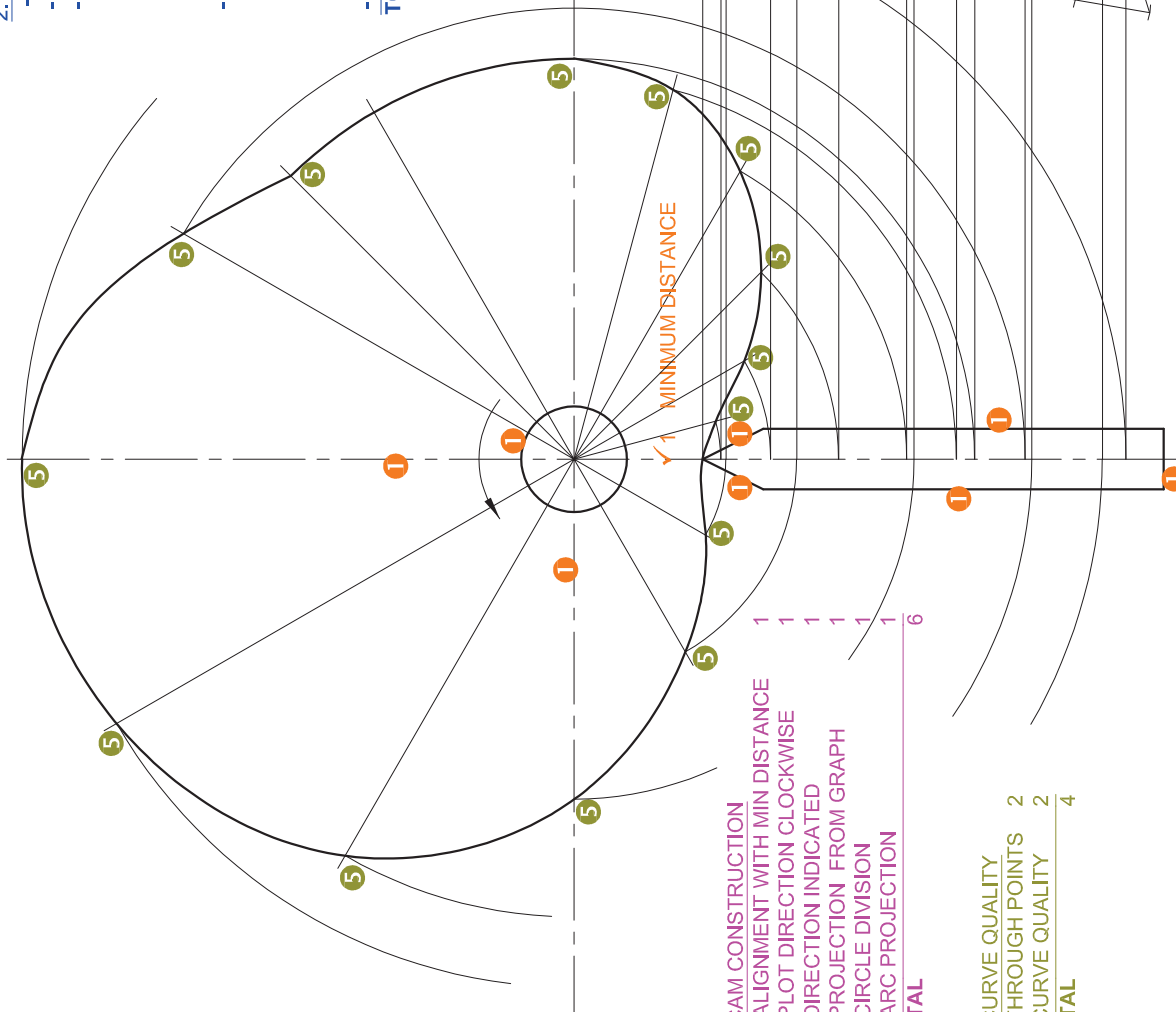
DISPLACEMENT GRAPH  
SCALE 360° : 120 mm

ASSESSMENT CRITERIA 2.2		
1	CONSTRUCTION	6
2	POINTS + CURVES	9
<b>TOTAL</b>		<b>15</b>

PAPER 2 QUESTION 2.2  
GRADE 12  
SC/NSC 2020  
MARKING GUIDELINE

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
<b>TOTAL</b>		<b>38</b>

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



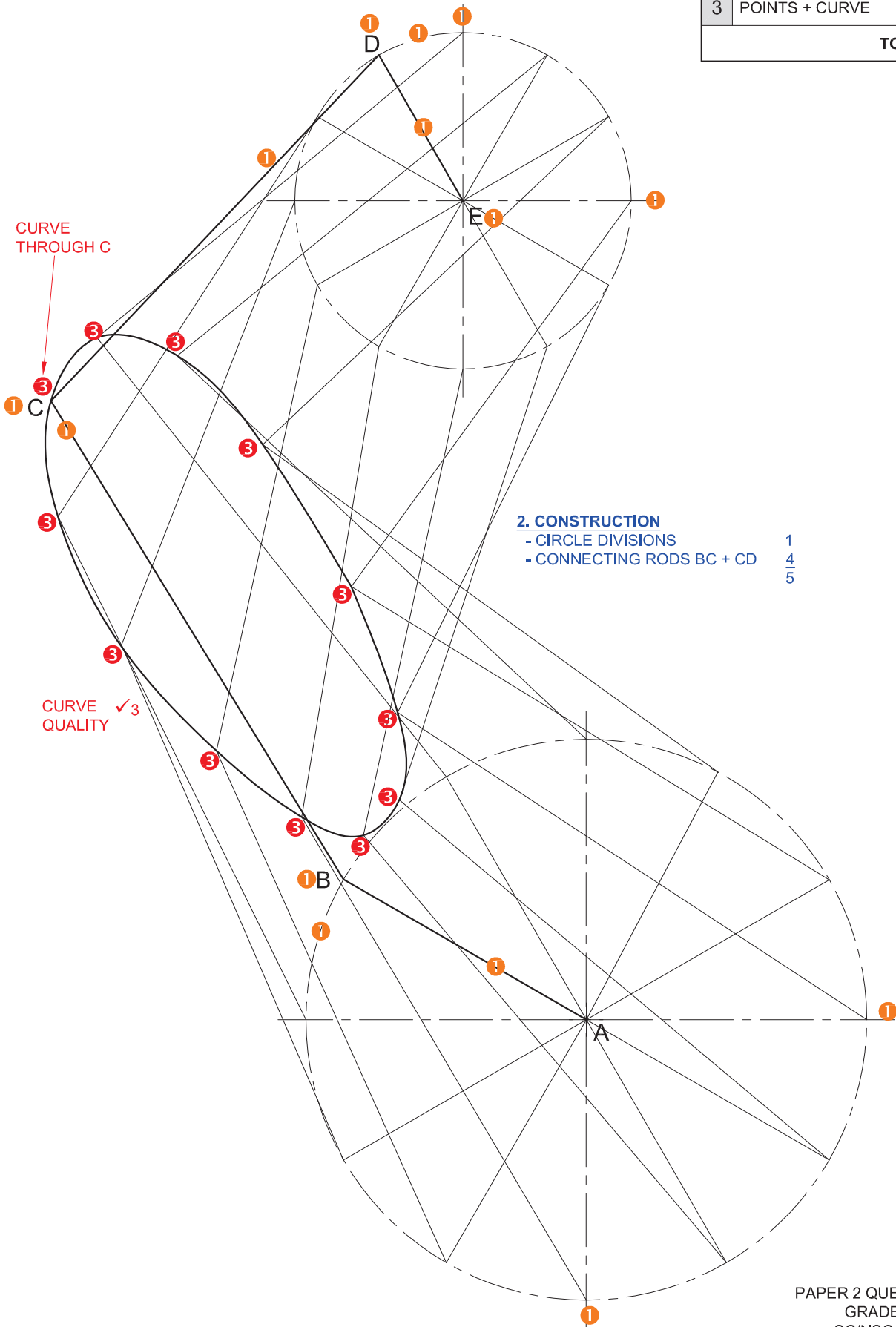
4. CAM CONSTRUCTION
- ALIGNMENT WITH MIN DISTANCE 1
  - PLOT DIRECTION CLOCKWISE 1
  - DIRECTION INDICATED 1
  - PROJECTION FROM GRAPH 1
  - CIRCLE DIVISION 1
  - ARC PROJECTION 1
- TOTAL** 6

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

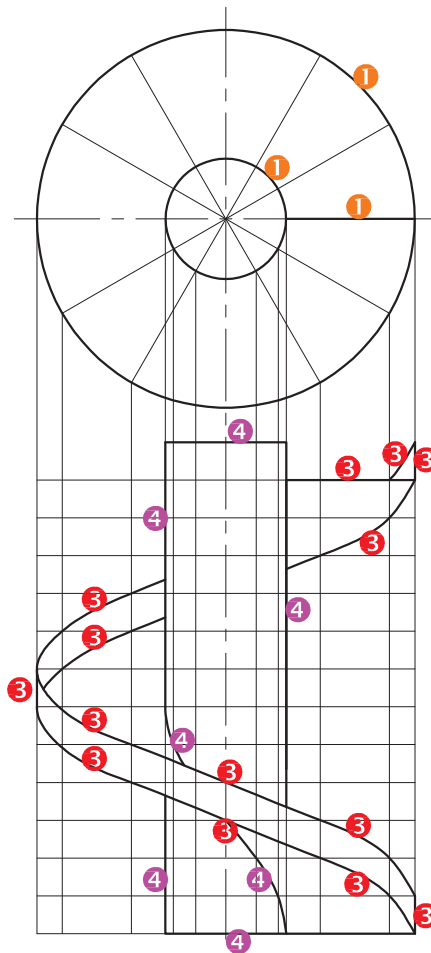
DISPLACEMENT GRAPH  
SCALE 30° = 8 mm

PAPER 2 QUESTION 2  
GRADE 12  
NSC 2019  
MARKING GUIDELINES

ASSESSMENT CRITERIA 2.1		
1	GIVEN	7
2	CONSTRUCTION	5
3	POINTS + CURVE	7
<b>TOTAL</b>		<b>19</b>



PAPER 2 QUESTION 2.1  
 GRADE 12  
 SC/NSC 2019  
 MARKING GUIDELINE



**2. CONSTRUCTION**

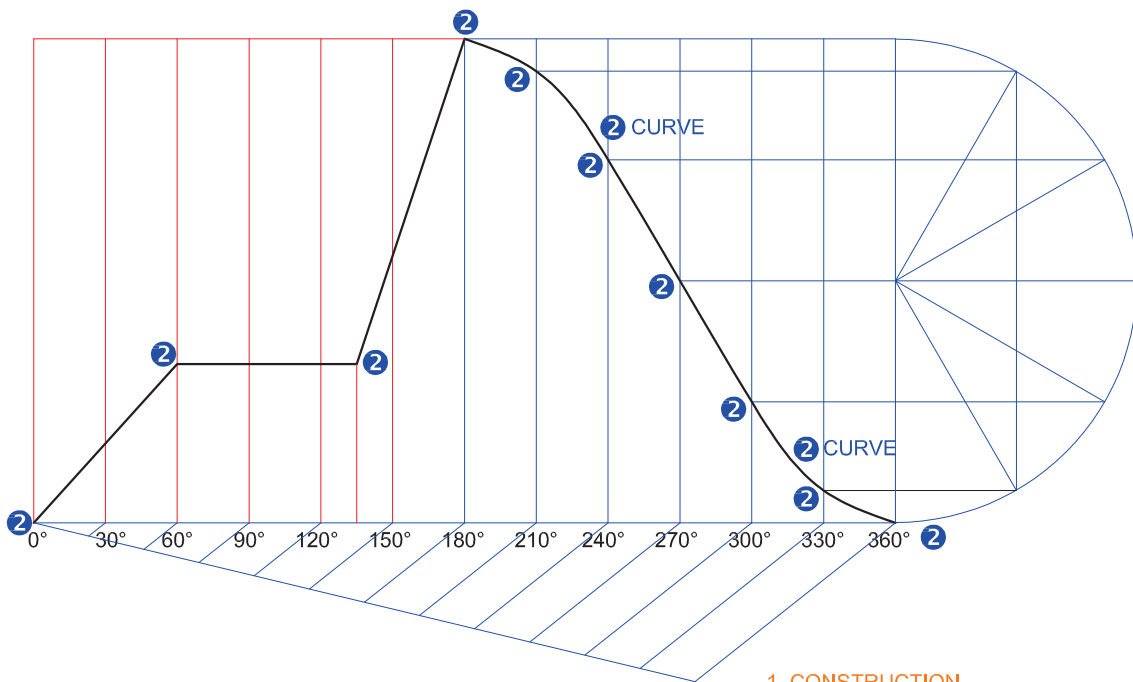
- CIRCLE DIVISION
- PITCH
- PITCH DIVISION
- HORIZONTAL PROJECTION
- VERTICAL PROJECTION
- DIRECTION

CURVE QUALITY ✓3 ✓3

1 2 3 4 5

ASSESSMENT CRITERIA		
1	GIVEN	1 1/2
2	CONSTRUCTION	5
3	OUTER HELIX	9
4	INNER HELIX + SHAFT	3 1/2
<b>SUBTOTAL</b>		<b>19</b>

PAPER 2 QUESTION 2.2  
 GRADE 12  
 SC/NSC 2019  
 MARKING GUIDELINE



DISPLACEMENT GRAPH ③  
 SCALE: 114 mm = 360° ROTATION ③

- 1 CONSTRUCTION
- LENGTH (114) 1
- \* LINE DIVISION (114 INTO 12 PARTS) 1
- SIMPLE HARMONIC MOTION
- \* SEMI CIRCLE 1/2
- \* CIRCLE DIVISION 1/2
- \* VERTICAL PROJECTION 1/2
- \* HORIZONTAL PROJECTION 1/2
- TOTAL 4

ASSESSMENT CRITERIA 2.1		
1	CONSTRUCTION	4
2	POINTS + CURVE	6
3	LABELS	1
PENALTIES (-)		
<b>SUBTOTAL</b>		<b>11</b>

PAPER 2 QUESTION 2.1  
 GRADE 12  
 NOVEMBER 2018  
 MARKING GUIDELINE



**1 CONSTRUCTION OF UNIFORM ACCELERATION + RETARDATION**

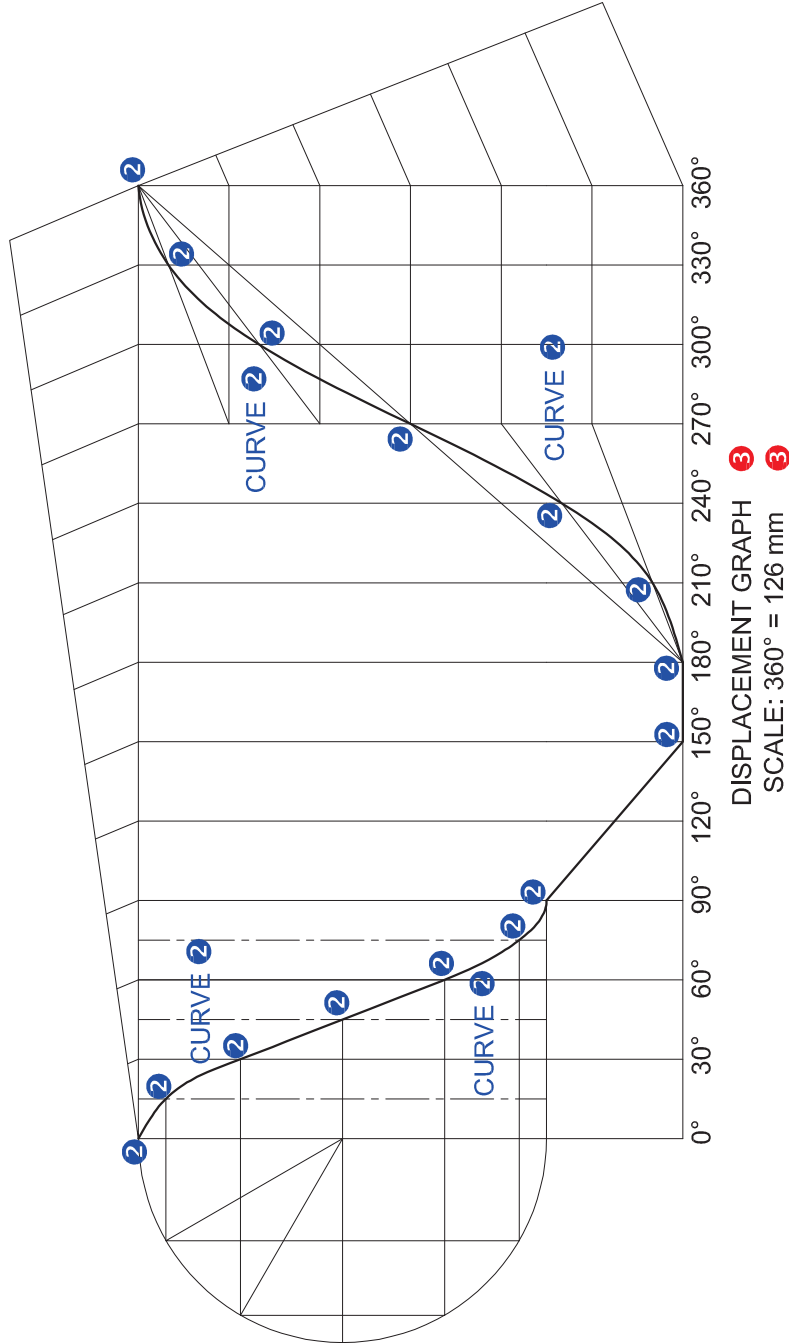
- HORIZONTAL DIVISION 1
- 180° - 270° CONSTRUCTION 1
- 270° - 360° CONSTRUCTION 1 3

**1 CONSTRUCTION OF GRAPH**

- LENGTH (126) ✓ 1
- LINE DIVISION 1 2

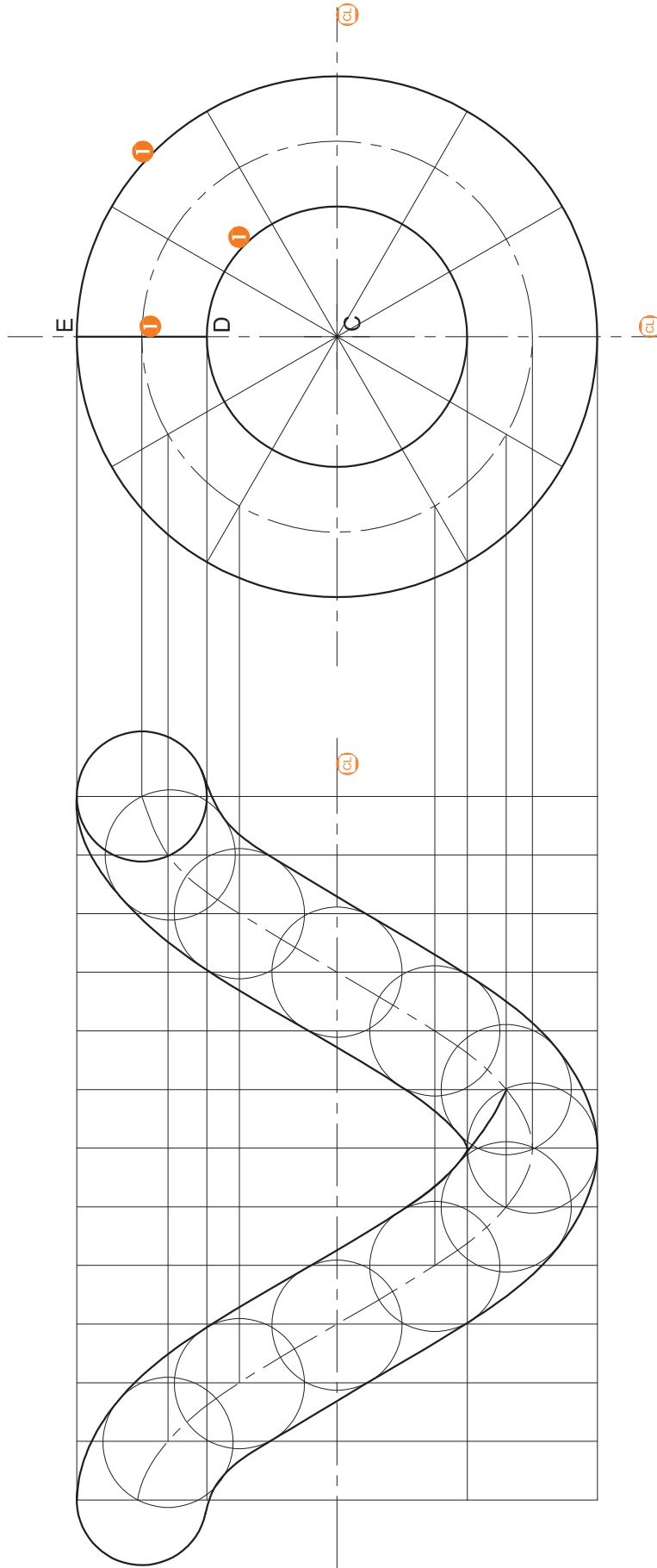
**1 CONSTRUCTION OF SIMPLE HARMONIC MOTION**

- SEMI CIRCLE 1
- CIRCLE DIVISION 1
- VERTICAL PROJECTION 1
- ADDITIONAL 15° DIVISIONS 1 2
- HORIZONTAL PROJECTION 2 2



ASSESSMENT CRITERIA	
1	CONSTRUCTION 7 1/2
2	POINTS + CURVE 9 1/2
3	LABELS 1
<b>SUBTOTAL 2.1 18</b>	

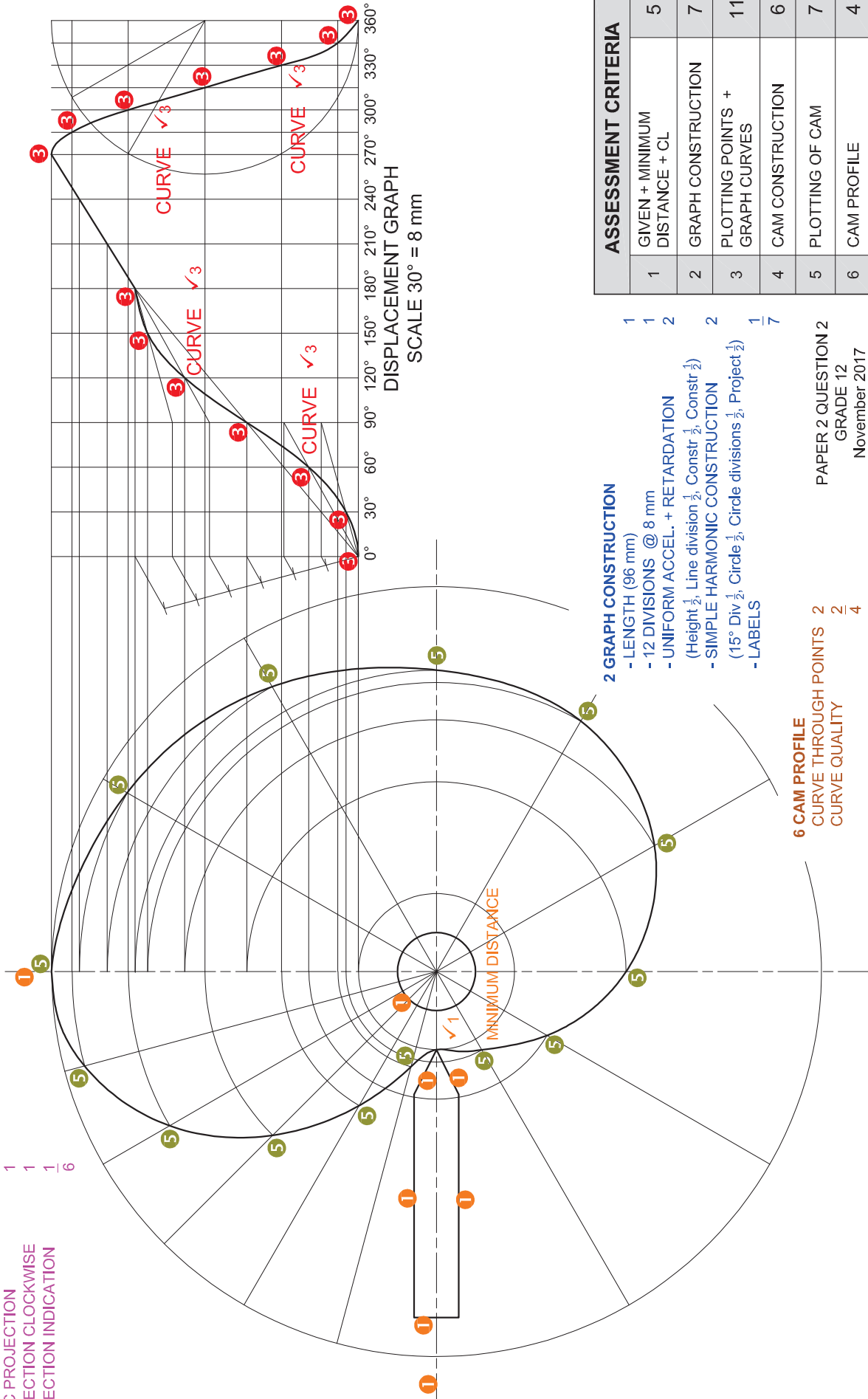
PAPER 2 QUESTION 2.1  
 GRADE 12  
 SCE 2018  
 MARKING GUIDELINES



- |                                       |          |           |
|---------------------------------------|----------|-----------|
| <b>2 CONSTRUCTION</b>                 |          |           |
| - PROFILE CENTRE                      | 1        |           |
| - CIRCLE DIVISIONS                    | 1        |           |
| - PITCH                               | 1        |           |
| - LINE DIVISION                       | 1        |           |
| - VERTICAL PROJECTION                 | 1        |           |
| - HORIZONTAL PROJECTION               | 1        |           |
|                                       | <u>6</u> |           |
| <b>3 FRONT VIEW</b>                   |          |           |
| - CORRECTLY PLACED CIRCLES (13 x 1/2) |          | 6 1/2     |
| - INDICATION DIRECTION                |          | 2         |
| - CURVES (4 x 1/2)                    |          | 2         |
| - START + FINISH                      |          | 1 1/2     |
|                                       |          | <u>12</u> |

PAPER 2 QUESTION 2.2  
 GRADE 12  
 SCE 2018  
 MARKING GUIDELINES

ASSESSMENT CRITERIA		
1	GIVEN + CENTRE LINES	3
2	CONSTRUCTION	6
3	FRONT VIEW	12
<b>2.2 SUBTOTAL</b>		<b>21</b>



- 4 CAM CONSTRUCTION**
- ALIGN WITH GRAPH 1
  - PROJECTION FROM GRAPH 1
  - CIRCLE DIVISION 1
  - ARC PROJECTION 1
  - DIRECTION CLOCKWISE 1
  - DIRECTION INDICATION 1
- 6

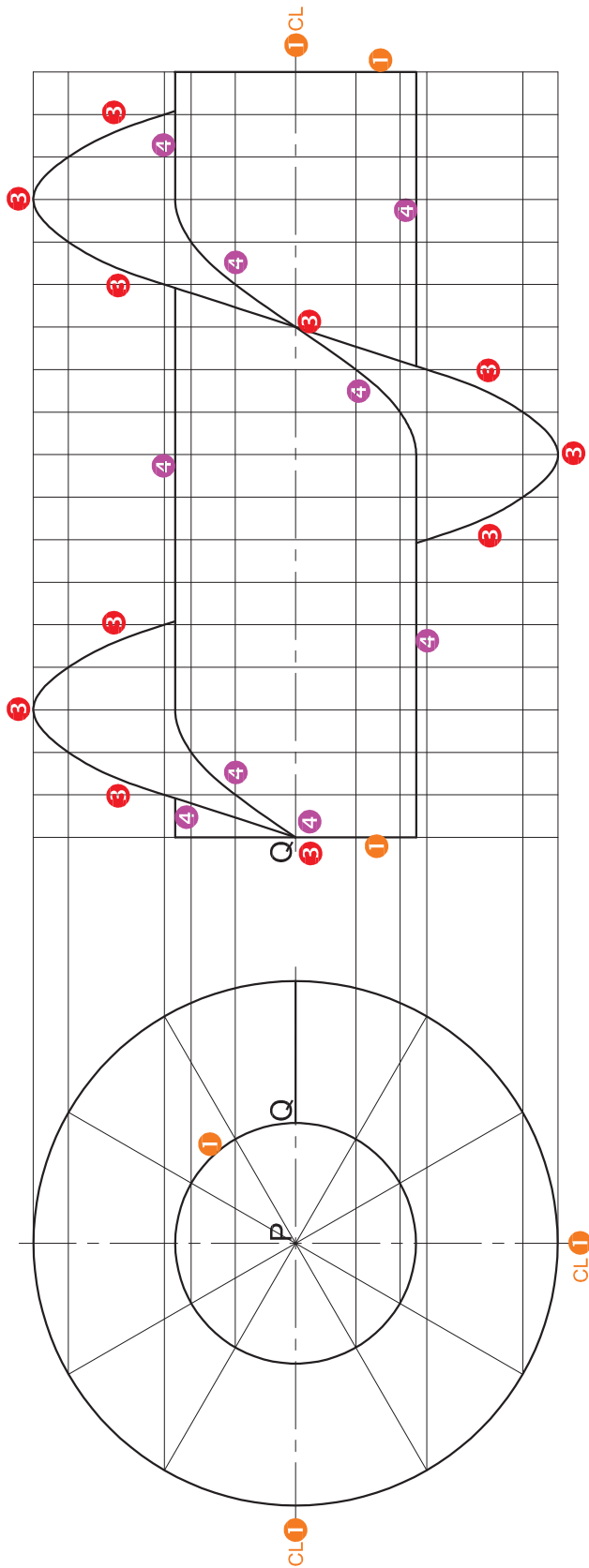
- 2 GRAPH CONSTRUCTION**
- LENGTH (96 mm) 1
  - 12 DIVISIONS @ 8 mm 1
  - UNIFORM ACCEL. + RETARDATION 2
- (Height  $\frac{1}{2}$ , Line division  $\frac{1}{2}$ , Constr  $\frac{1}{3}$ , Constr  $\frac{1}{2}$ )
- SIMPLE HARMONIC CONSTRUCTION**
- (15° Div  $\frac{1}{2}$ , Circle  $\frac{1}{2}$ , Circle divisions  $\frac{1}{2}$ , Project  $\frac{1}{2}$ ) 2
  - LABELS 1
- 7

- 6 CAM PROFILE**
- CURVE THROUGH POINTS 2
  - CURVE QUALITY 2
- 4

ASSESSMENT CRITERIA		
1	GIVEN + MINIMUM DISTANCE + CL	5
2	GRAPH CONSTRUCTION	7
3	PLOTTING POINTS + GRAPH CURVES	11
4	CAM CONSTRUCTION	6
5	PLOTTING OF CAM	7
6	CAM PROFILE	4
<b>TOTAL</b>		<b>40</b>

PAPER 2 QUESTION 2  
 GRADE 12  
 November 2017  
 MARKING GUIDELINES



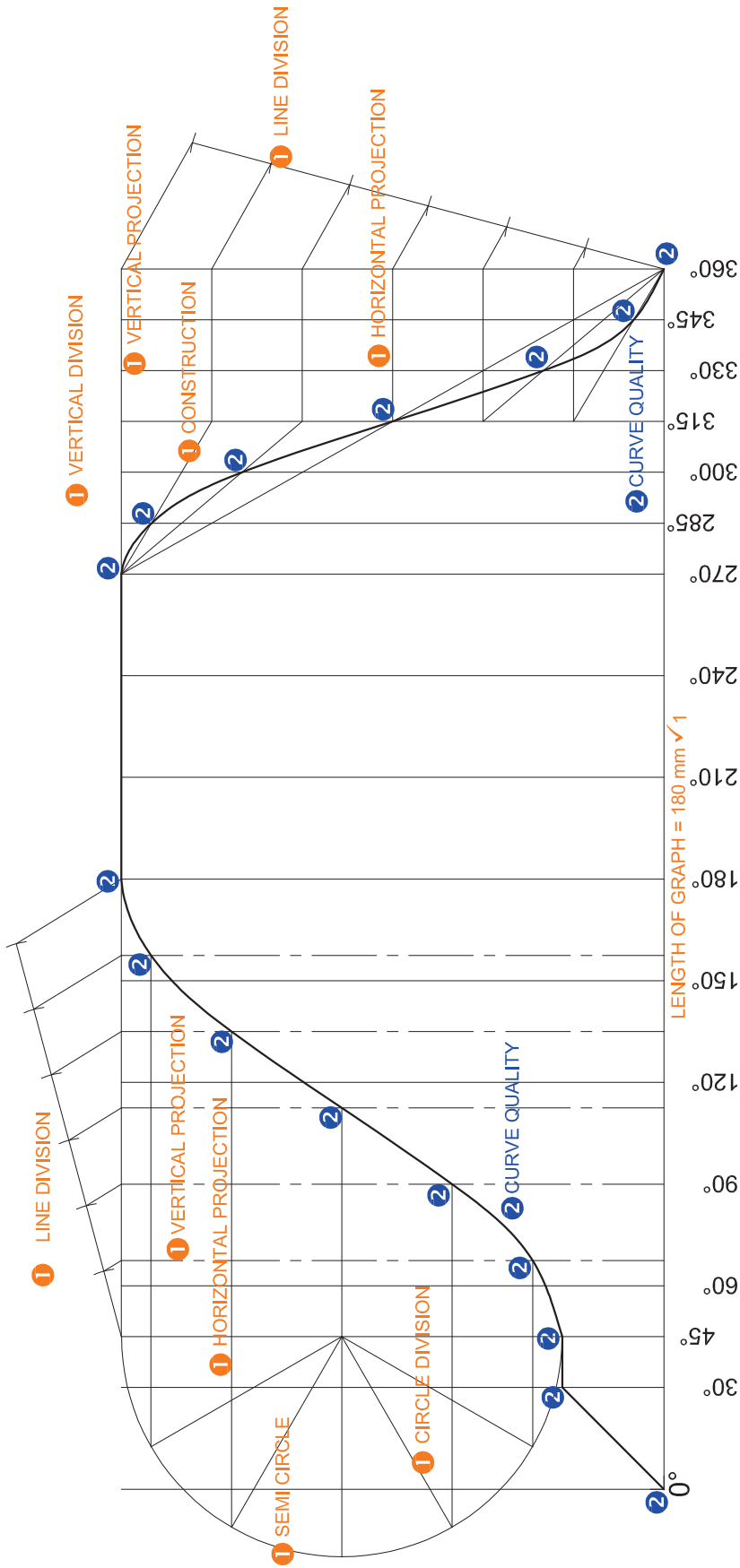


5 ✓✓ CURVE QUALITY FOR BOTH HELICES

- 2. CONSTRUCTION**
- OUTER CIRCLE (NOMINAL DIAMETER) 1
  - STARTING POSITION ON **q** 1
  - CIRCLE DIVISION 1
  - PITCH + LINE DIVISION 2
  - VERTICAL PROJECTION 1
  - HORIZONTAL PROJECTION 1
  - DIRECTION 1
- 
- 8

ASSESSMENT CRITERIA 2.1	
1	GIVEN + CENTRE LINES 3
2	CONSTRUCTION 8
3	OUTER HELIX 5 1/2
4	INNER HELIX + SHAFT 4 1/2
5	CURVE QUALITY 2
<b>SUBTOTAL 23</b>	

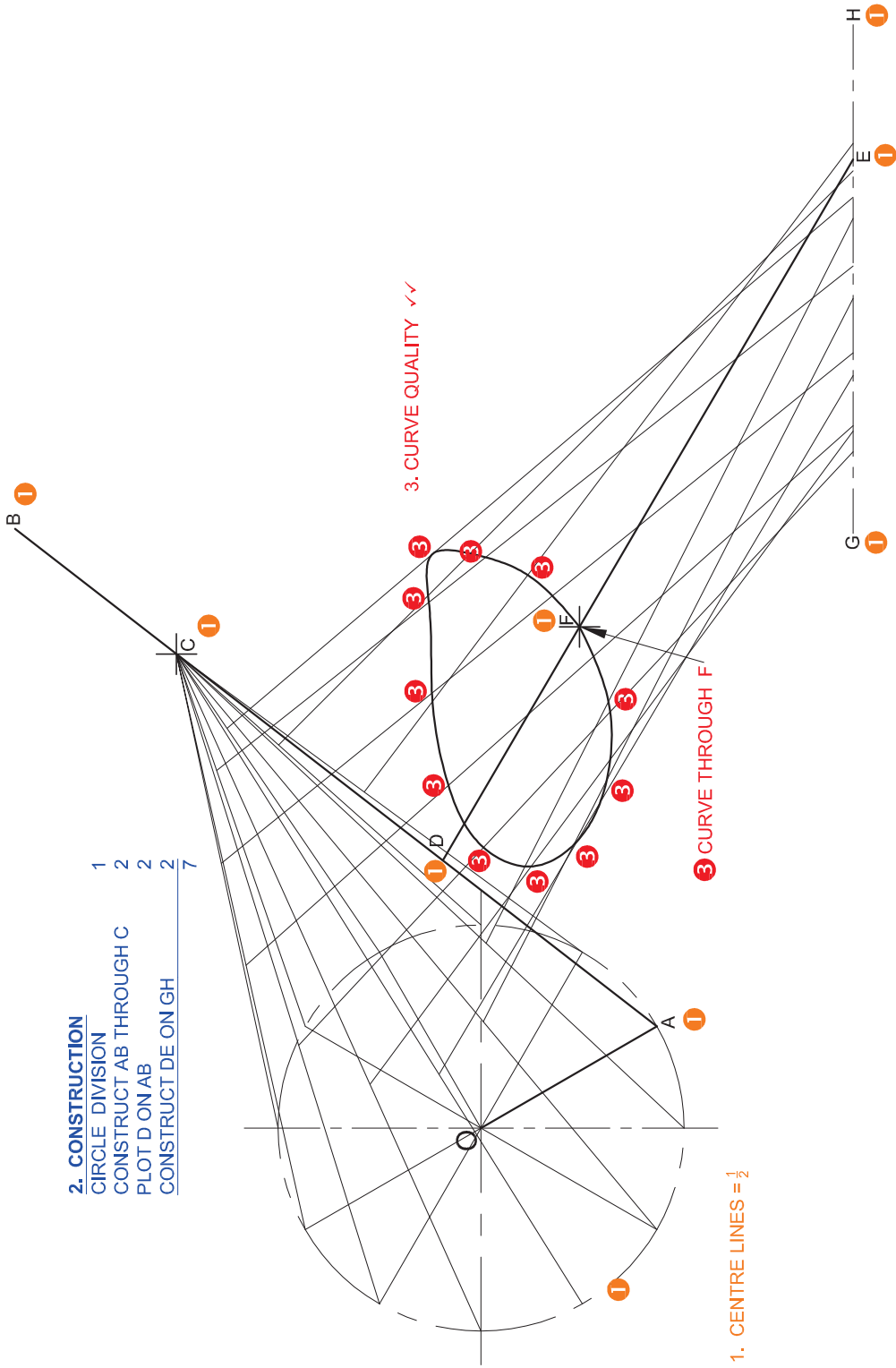
PAPER 2 QUESTION 2.1  
 GRADE 12  
 Feb./Mar. 2017  
 MEMORANDUM



GRAPH OF DISPLACEMENT **3**  
 HORIZONTAL SCALE - 180mm = 360° **3**

PAPER 2 QUESTION 2.2  
 GRADE 12  
 Feb./Mar. 2017  
 MEMORANDUM

ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION
2	POINTS + CURVES
3	LABELS
PENALTIES (-)	
<b>SUBTOTAL 16</b>	



- 2. CONSTRUCTION
- CIRCLE DIVISION 1
- CONSTRUCT AB THROUGH C 2
- PLOT D ON AB 2
- CONSTRUCT DE ON GH 2
- 7

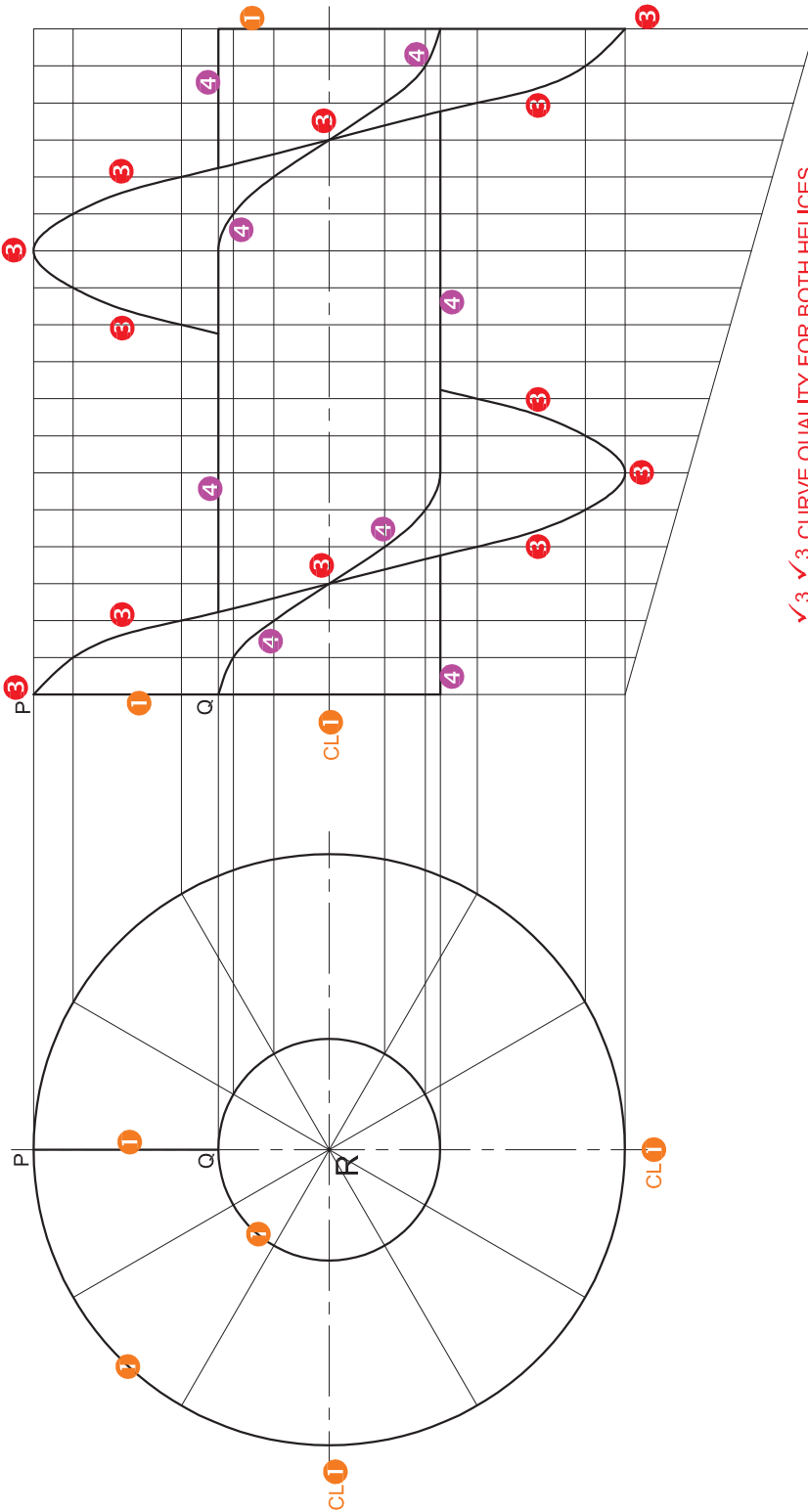
3. CURVE QUALITY ✓✓

3 CURVE THROUGH F

1. CENTRE LINES = 1/2

ASSESSMENT CRITERIA 2.1	
1	GIVEN 5
2	CONSTRUCTION 7
3	POINTS + CURVE 8
<b>SUBTOTAL 20</b>	

PAPER 2 QUESTION 2.1  
 GRADE 12  
 November 2016  
 MEMORANDUM



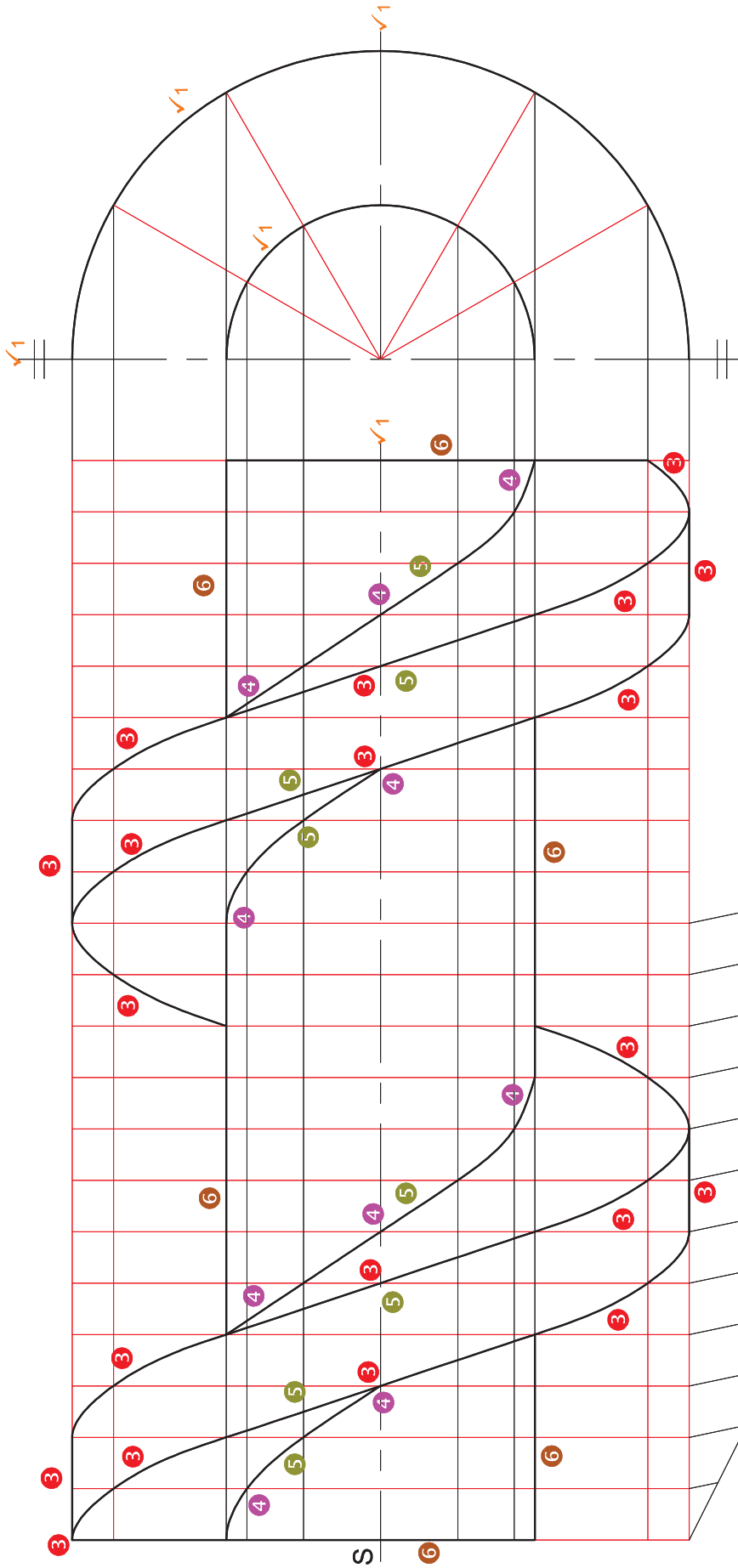
✓ 3 ✓ 3 CURVE QUALITY FOR BOTH HELICES

**2. CONSTRUCTION**

- CIRCLE DIVISION 1
  - PITCH + LINE DIVISION 2
  - VERTICAL DIVISION 1
  - HORIZONTAL PROJECTION 1
  - DIRECTION 1
- 
- 6

ASSESSMENT CRITERIA 2.2	
1	GIVEN + CENTRE LINES 4
2	CONSTRUCTION 6
3	OUTER HELIX + CURVE QUALITY 8
4	INNER HELIX + SHAFT 4
<b>SUBTOTAL 22</b>	

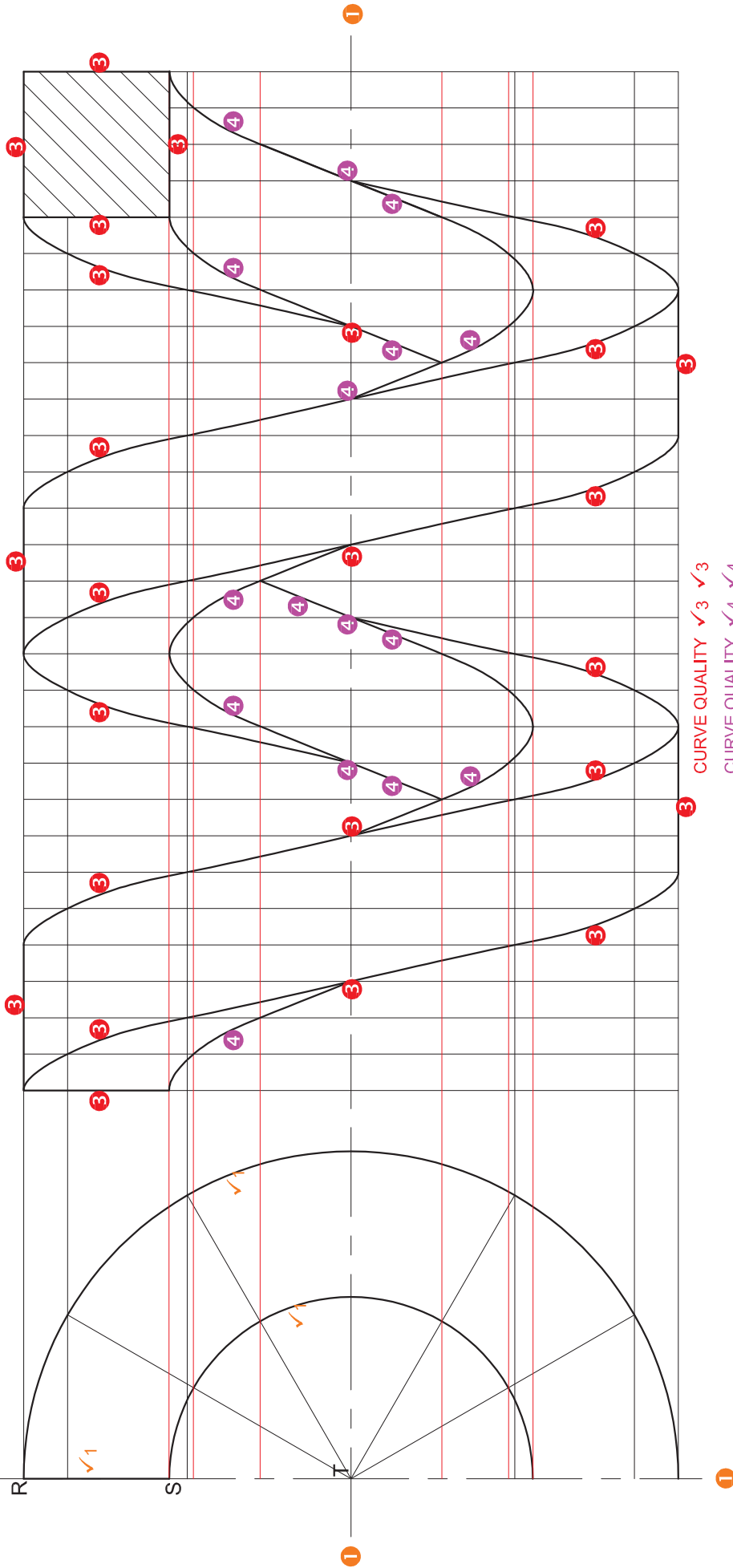
PAPER 2 QUESTION 2.2  
 GRADE 12  
 November 2016  
 MEMORANDUM



- 2. CONSTRUCTION**
- CIRCLE DIVISION 1
  - PITCH 1
  - LINE DIVISION 1
  - VERTICAL PROJECTION 1
  - HORIZONTAL PROJECTION 1 1/5

ASSESSMENT CRITERIA	
1	RIGHT VIEW + CENTRE LINES 5
2	CONSTRUCTION 5
3	OUTER CURVE POINTS 10
4	INNER CURVE POINTS 5
5	CURVE QUALITY 4
6	CORE 3
<b>TOTAL 32</b>	

PAPER 2 QUESTION 2  
 GRADE 12  
 DBE/Feb.-Mar. 2016  
 MEMORANDUM



CURVE QUALITY ✓ 3 ✓ 3  
 CURVE QUALITY ✓ 4 ✓ 4

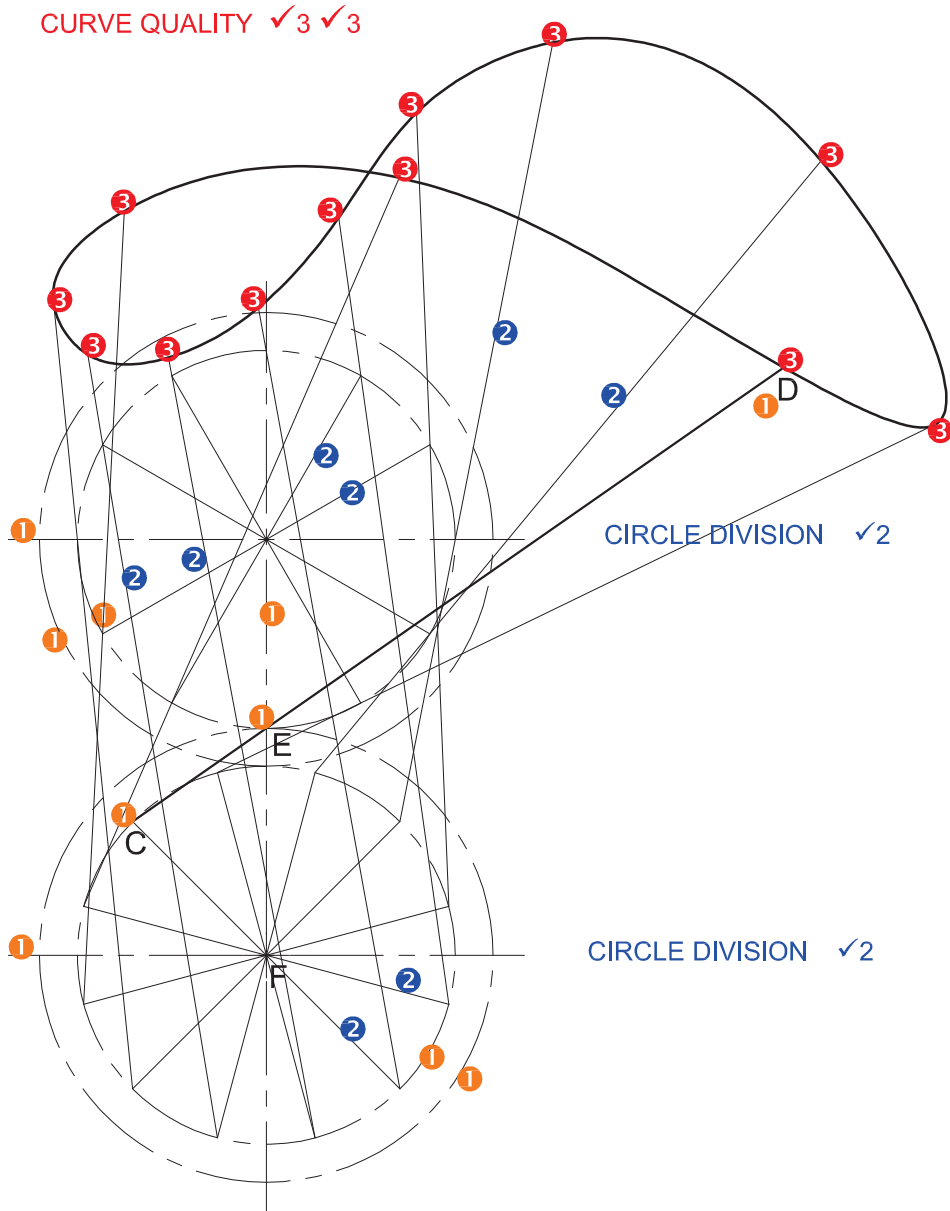
**CONSTRUCTION:**

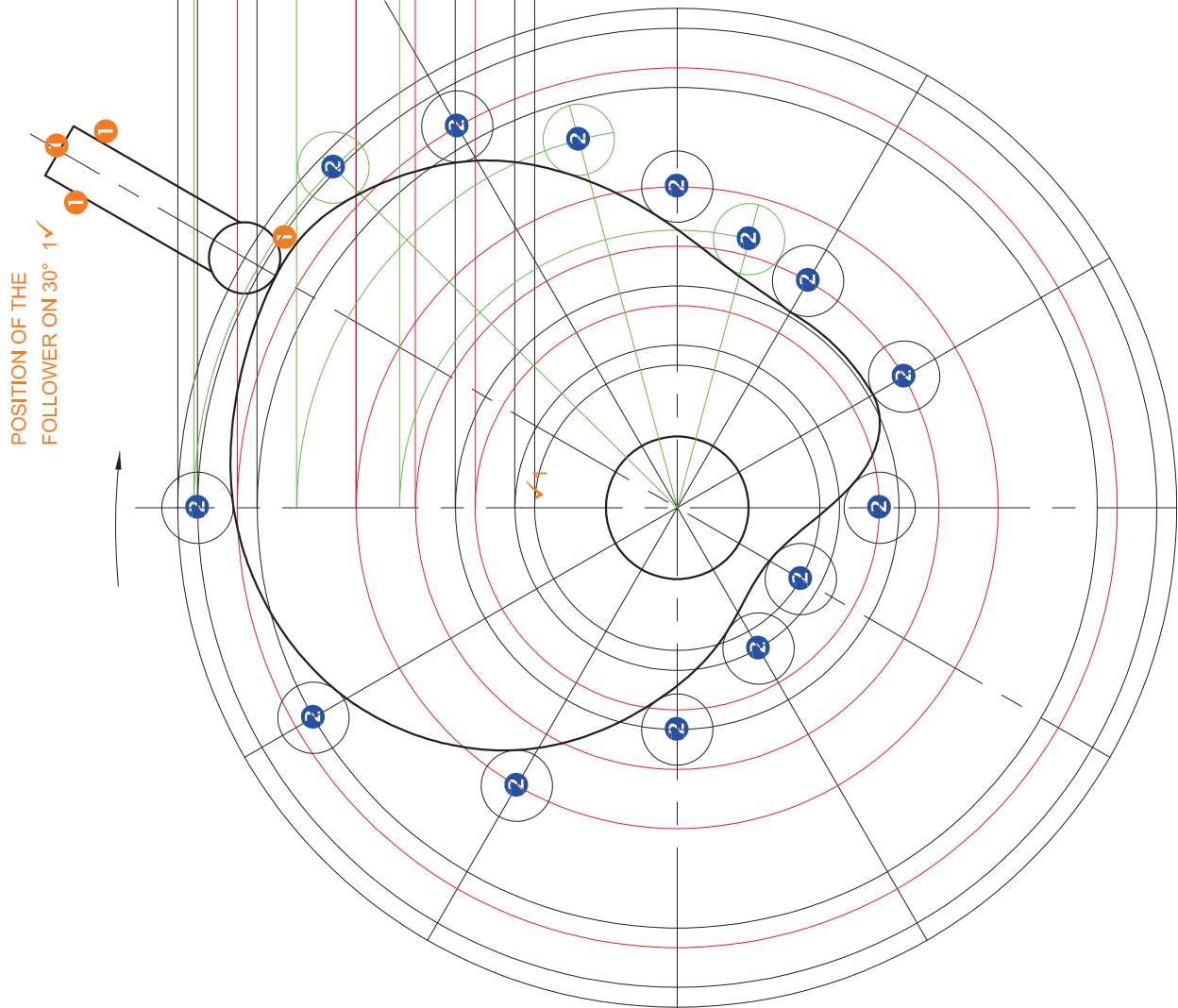
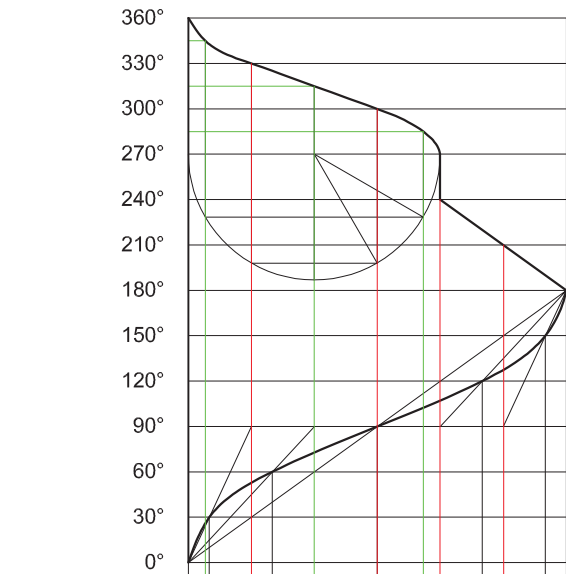
- CIRCLE DIVISION 1
- PITCH 1
- HORIZONTAL PROJECTION INNER CIRCLE 1
- HORIZONTAL PROJECTION OUTER CIRCLE 1
- VERTICAL DIVISION FIRST TURN 1
- VERTICAL DIVISION SECOND TURN 2
- DIRECTION 8

ASSESSMENT CRITERIA	
1	GIVEN + CENTRE LINES + STARTING POINT 4½
2	CONSTRUCTION 8
3	OUTSIDE POINTS + CURVE + QUALITY 14½
4	INSIDE POINTS + CURVE + QUALITY 10
PENALTIES (-)	
<b>TOTAL 37</b>	

ASSESSMENT CRITERIA 2.1	
1	GIVEN + CENTRE LINES 5
2	CONSTRUCTION 6
3	POINTS + CURVE 8
<b>SUBTOTAL 2.1 19</b>	

PAPER 2 QUESTION 2.1  
 GRADE 12  
 November 2015  
 MEMORANDUM

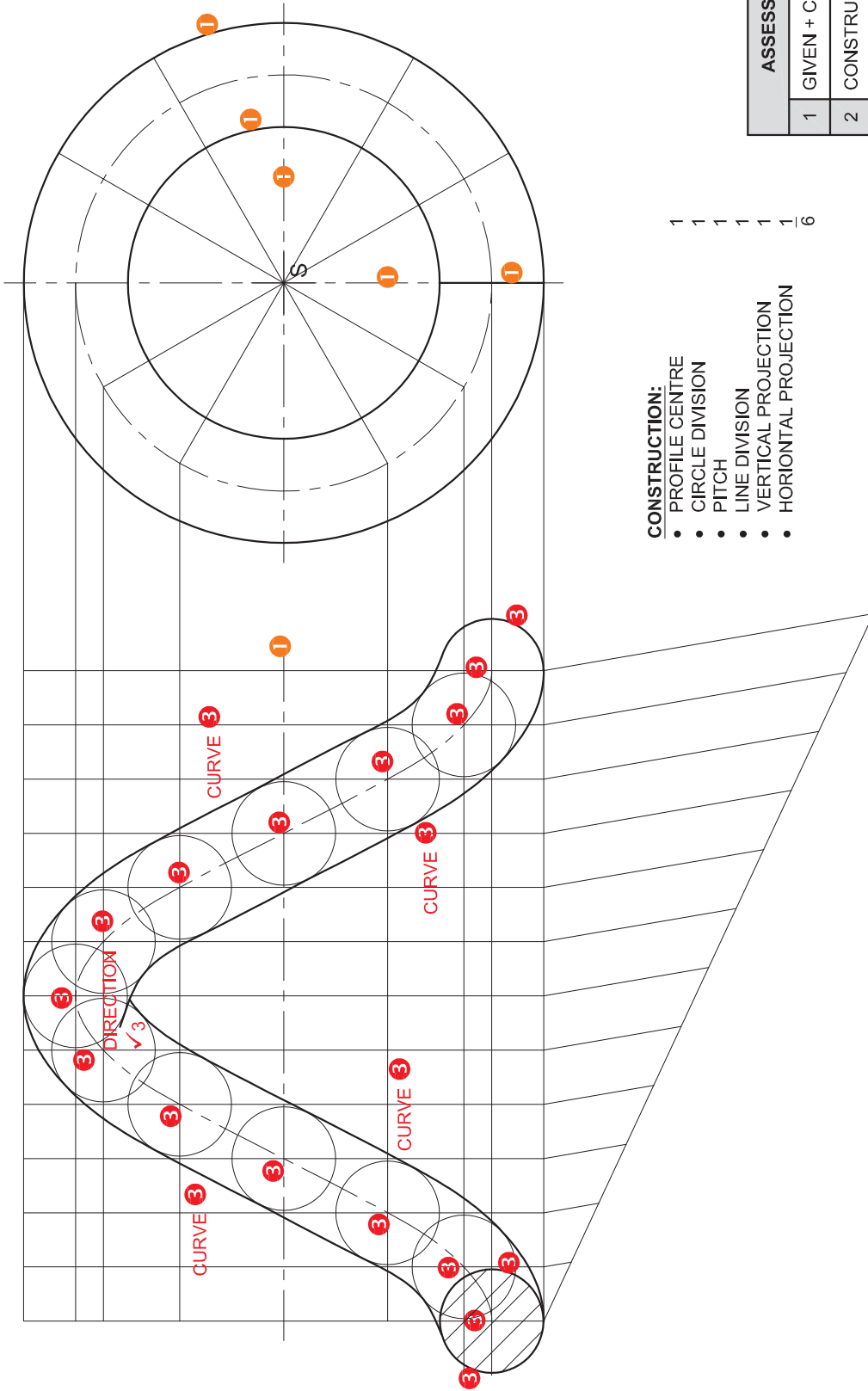




ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION + FOLLOWER + DIRECTION
2	PLOTTING
3	CAM PROFILE
<b>SUBTOTAL 2.2</b>	
8	
7	
6	
<b>21</b>	

PAPER 2 QUESTION 2.2  
 GRADE 12  
 November 2015  
 MEMORANDUM

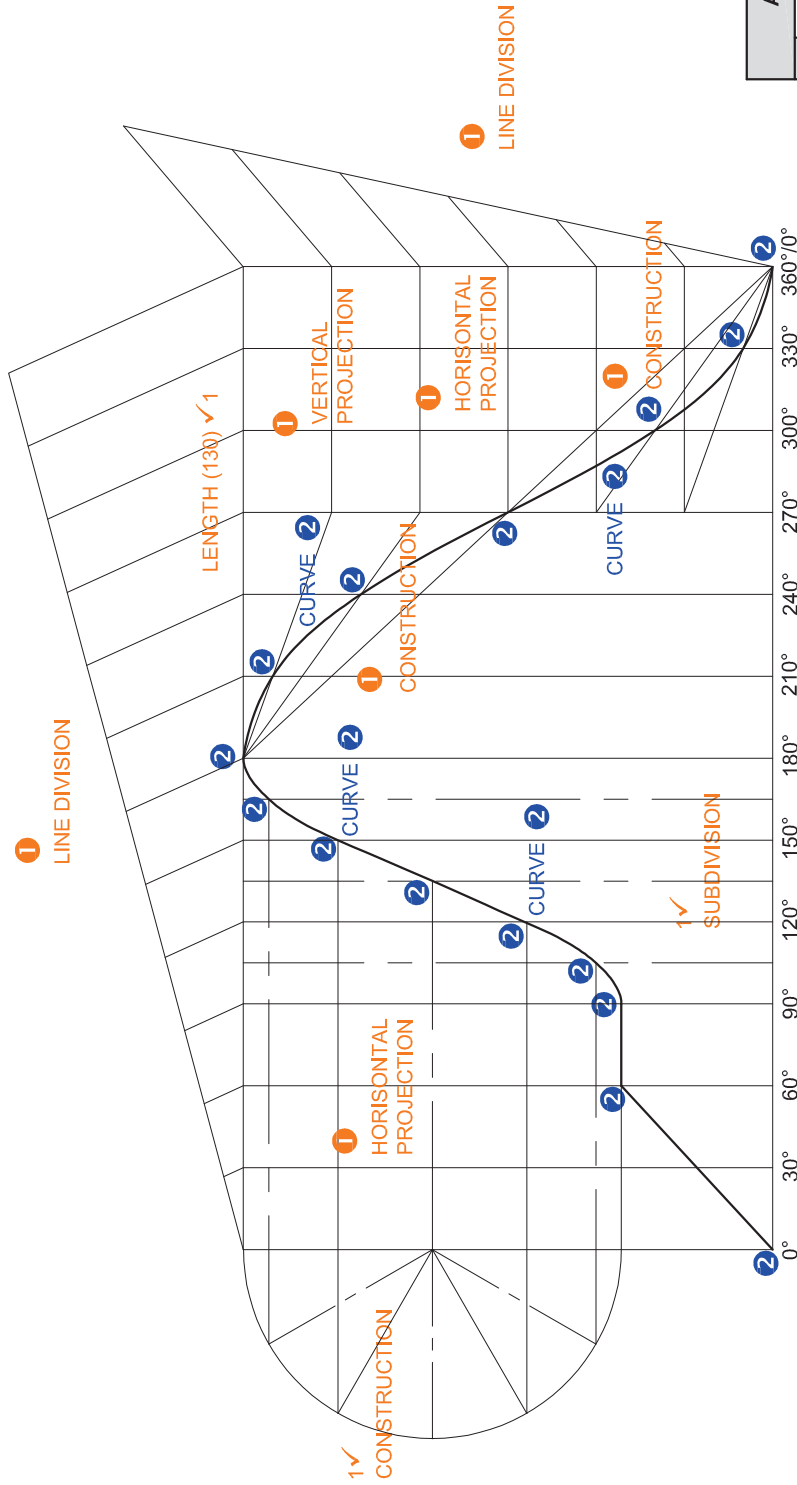
PROFILE CIRCLES (Ø16) ✓ 3



- CONSTRUCTION:**
- PROFILE CENTRE 1
  - CIRCLE DIVISION 1
  - PITCH 1
  - LINE DIVISION 1
  - VERTICAL PROJECTION 1
  - HORIZONTAL PROJECTION 1
- 6

ASSESSMENT CRITERIA	
1	GIVEN + CENTRE LINES 3
2	CONSTRUCTION 6
3	POINTS + CURVES 12
PENALTIES (-)	
<b>SUBTOTAL 2.1</b>	
<b>21</b>	

PAPER 2 QUESTION 2.1  
 GRADE 12  
 DBE/November 2014  
 MEMORANDUM

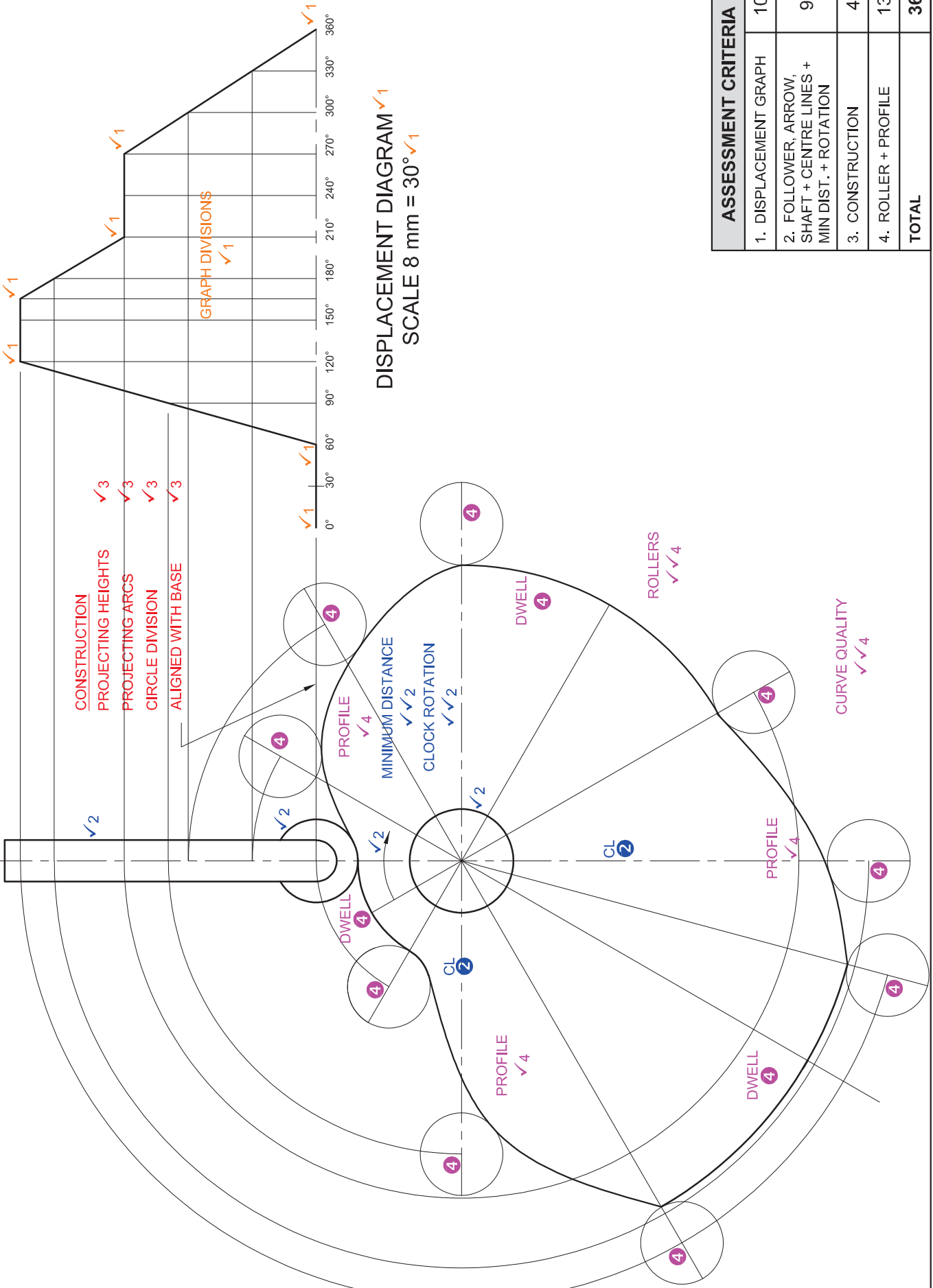


DISPLACEMENT GRAPH **3**  
 SCALE: 360° = 130 mm **3**

PAPER 2 QUESTION 2.2  
 GRADE 12  
 DBE/November 2014  
 MEMORANDUM

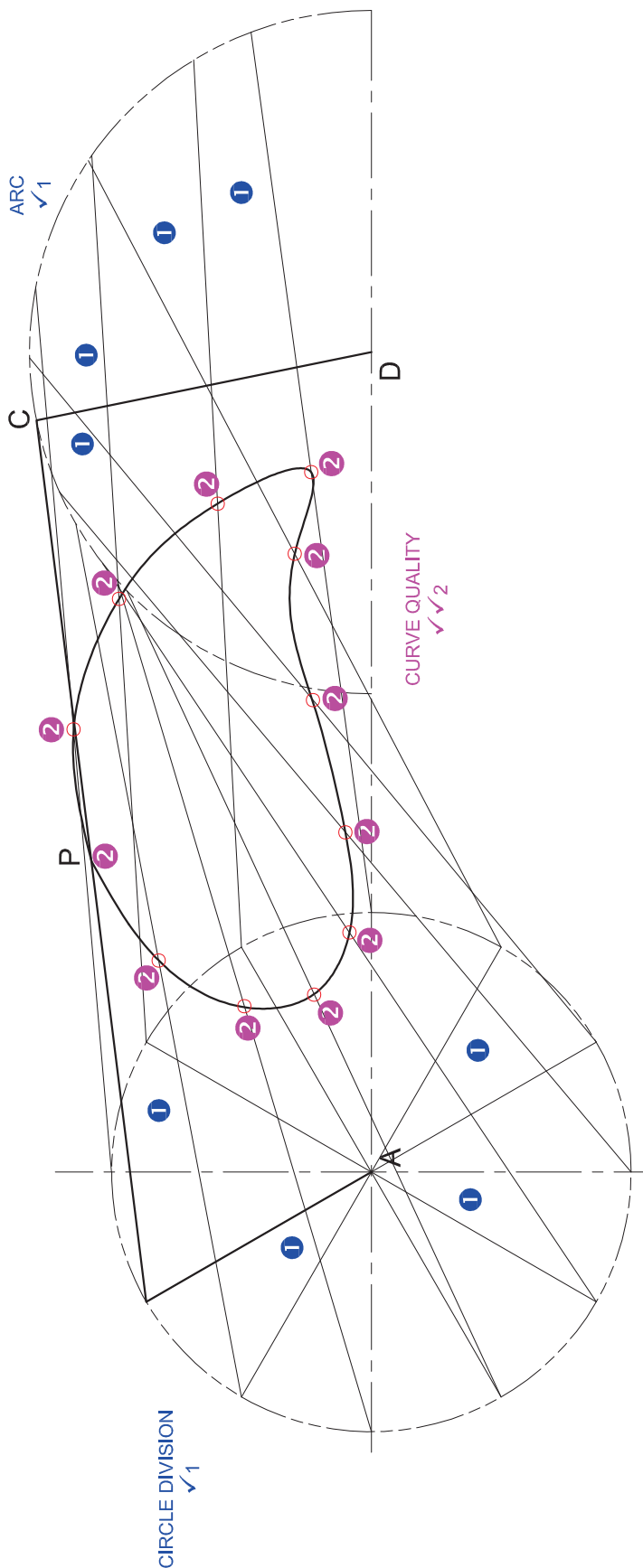
ASSESSMENT CRITERIA	
1	CONSTRUCTION 6½
2	POINTS + CURVES 9½
3	LABELS 1
PENALTIES (-)	
<b>2.2 SUBTOTAL 17</b>	
<b>2.1 SUBTOTAL 21</b>	
<b>TOTAL 38</b>	





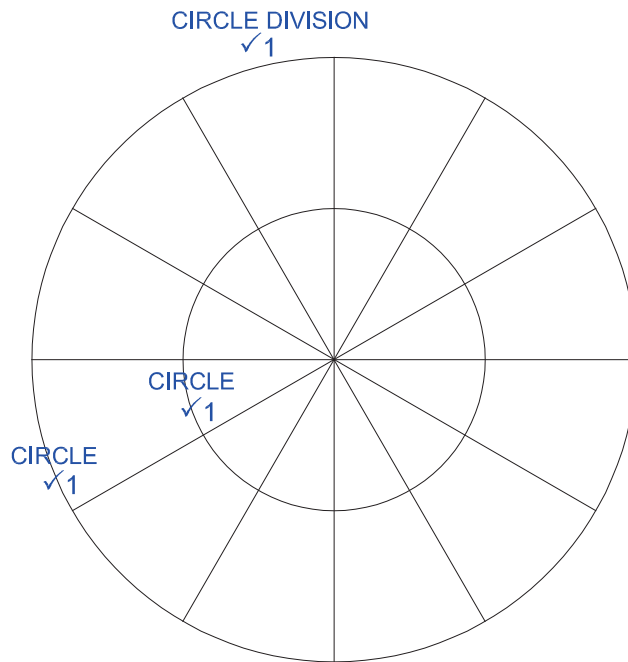
ASSESSMENT CRITERIA	
1. DISPLACEMENT GRAPH	10
2. FOLLOWER, ARROW, SHAFT + CENTRE LINES + MIN DIST. + ROTATION	9
3. CONSTRUCTION	4
4. ROLLER + PROFILE	13
<b>TOTAL</b>	<b>36</b>

PAPER 2 QUESTION 2  
GRADE 12  
FEB. - MAR. 2014  
MEMORANDUM

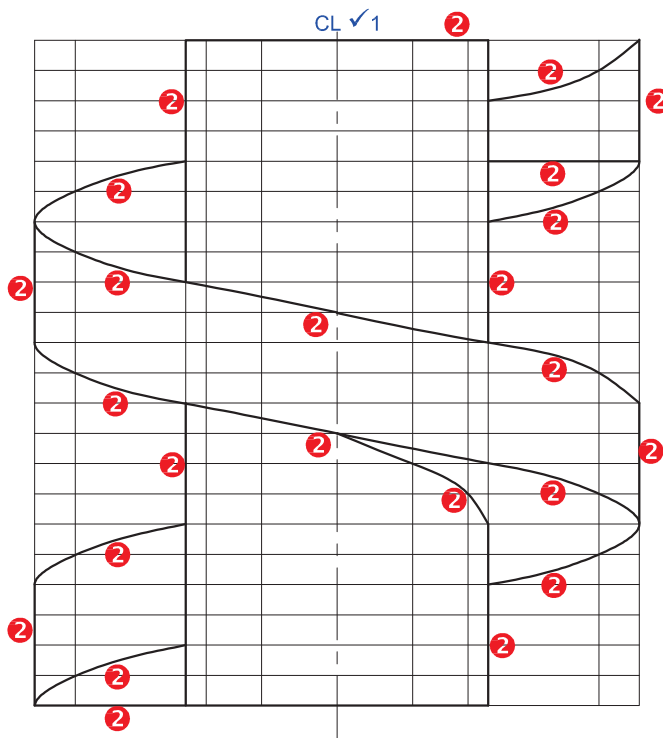


ASSESSMENT CRITERIA		
1	CONSTRUCTION	6
2	LOCUS OF P	8
SUBTOTAL		14

PAPER 2 QUESTION 2.1  
 GRADE 12  
 November 2013  
 MEMORANDUM

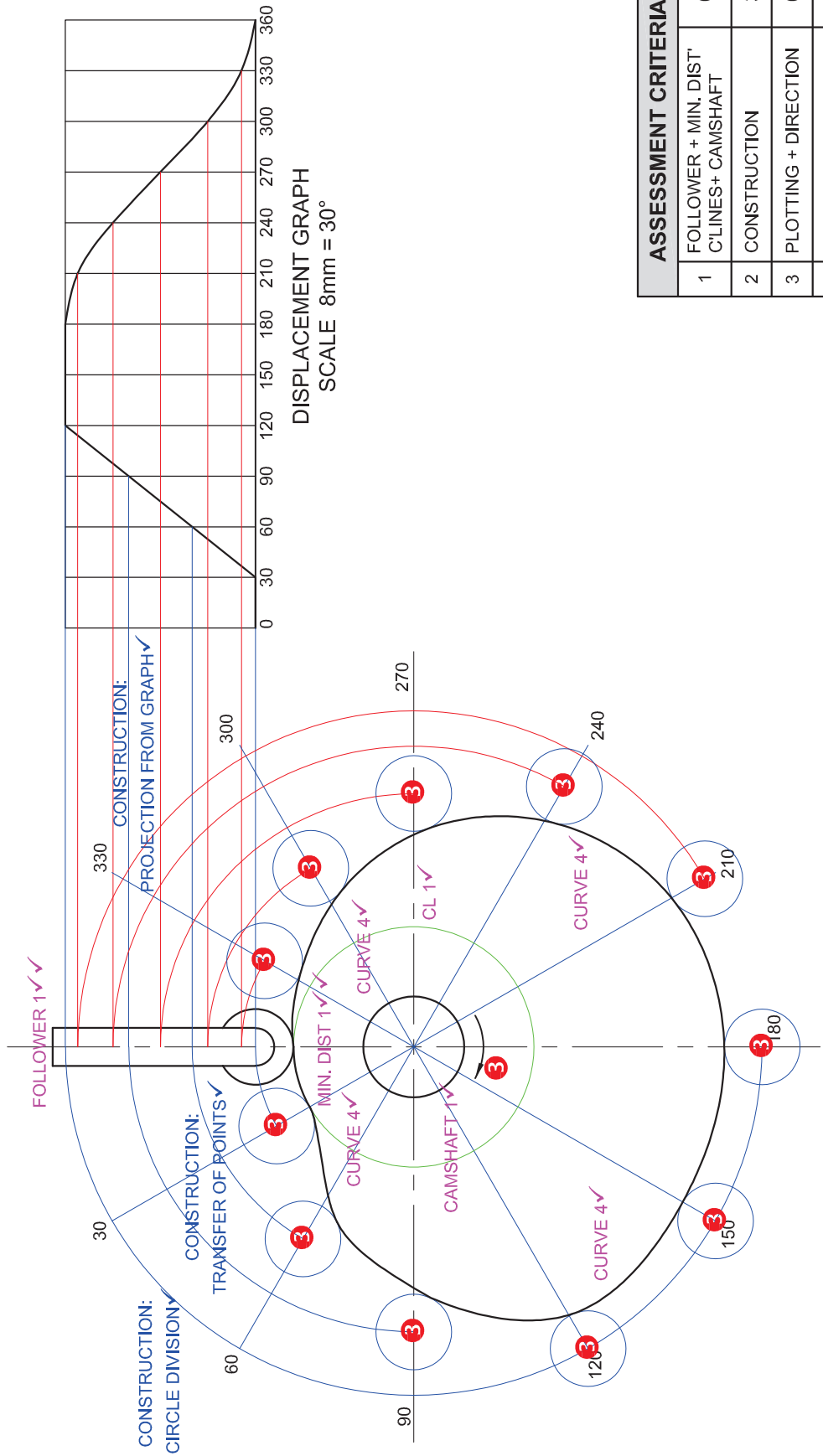


PITCH ✓1  
 HORIZONTAL DIVISION ✓1  
 VERTICAL PROJECTION ✓1  
 LEFT HAND ✓1



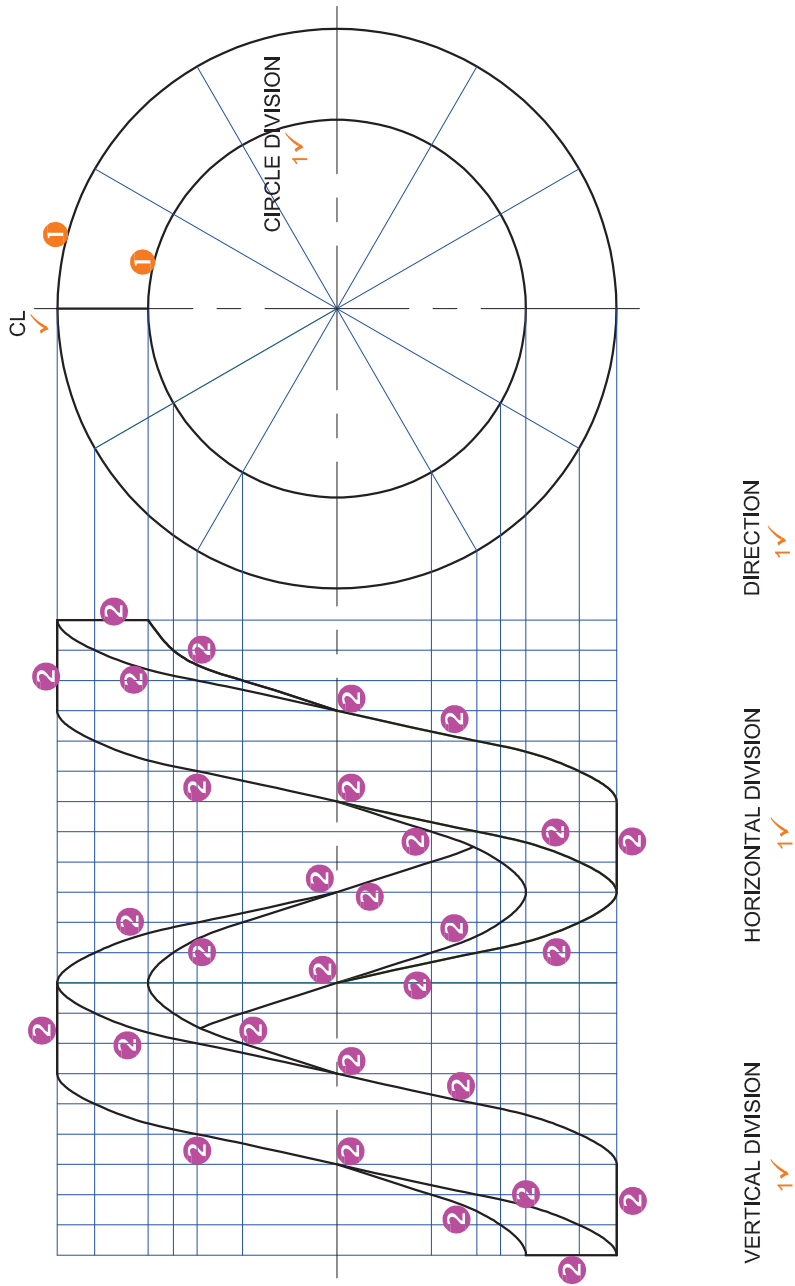
ASSESSMENT CRITERIA		
1	CL + CONSTRUCTION	8
2	CHUTE	12
SUBTOTAL		20

PAPER 2 QUESTION 2.2  
 GRADE 12  
 November 2013  
 MEMORANDUM



ASSESSMENT CRITERIA	
1	FOLLOWER + MIN. DIST' C'LINES+ CAMSHAFT
2	CONSTRUCTION
3	PLOTTING + DIRECTION
4	CURVE
<b>SUBTOTAL</b>	
	<b>19</b>

PAPER 2 QUESTION 2.1  
GRADE 12  
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MEMORANDUM

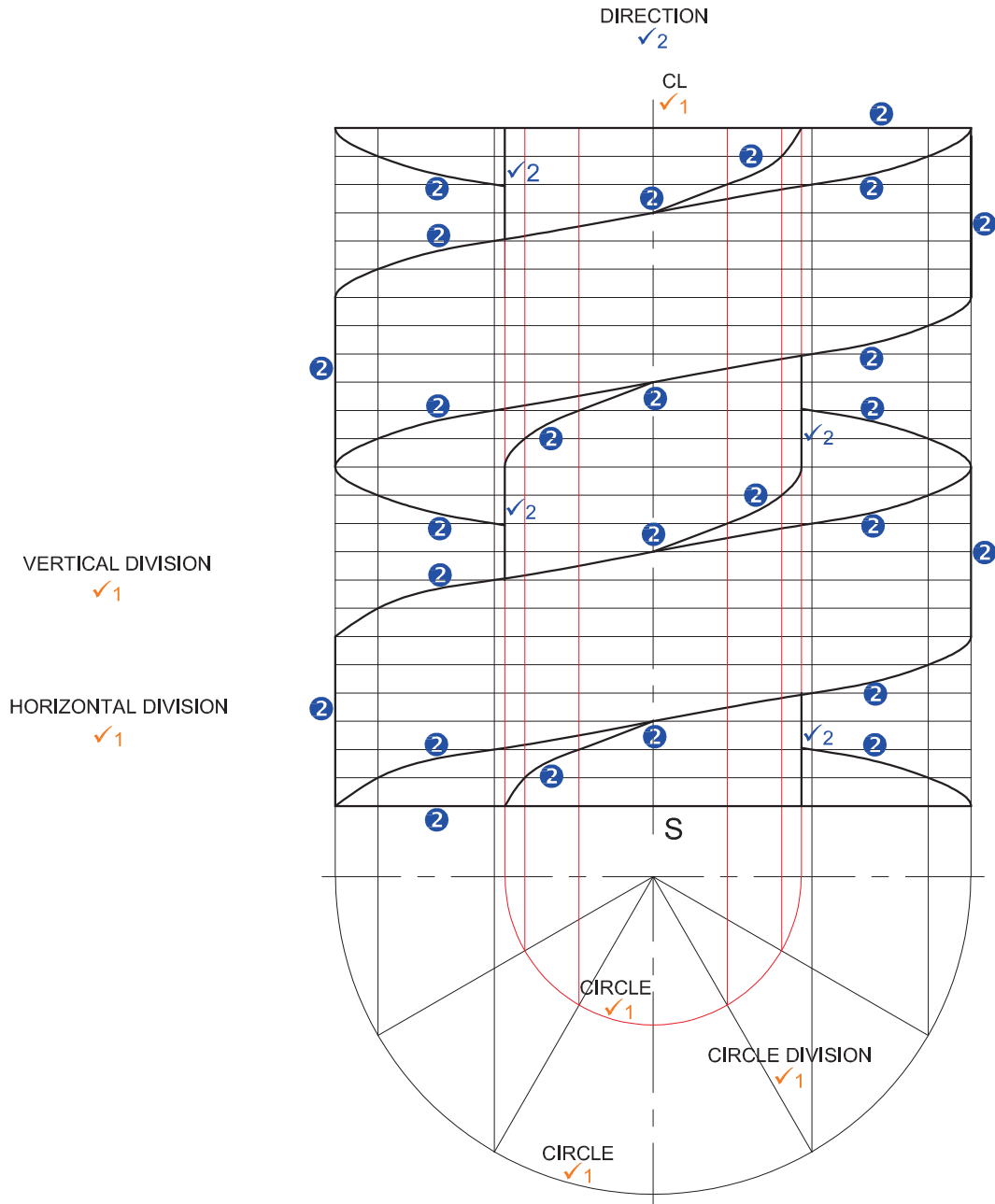


ASSESSMENT CRITERIA	
1	CONSTRUCTION
2	POINTS + CURVE
<b>SUBTOTAL</b>	

6

15

21

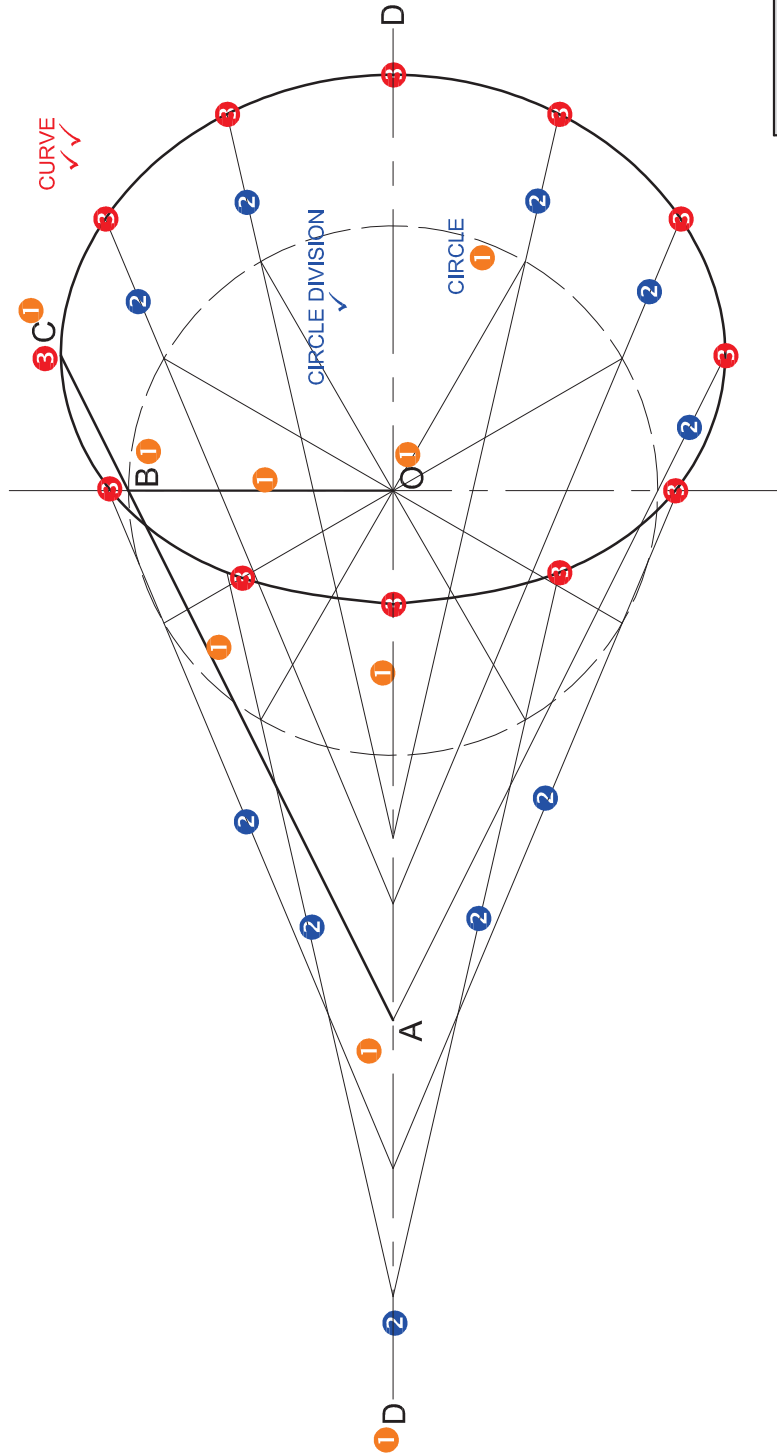


VERTICAL DIVISION  
✓1

HORIZONTAL DIVISION  
✓1

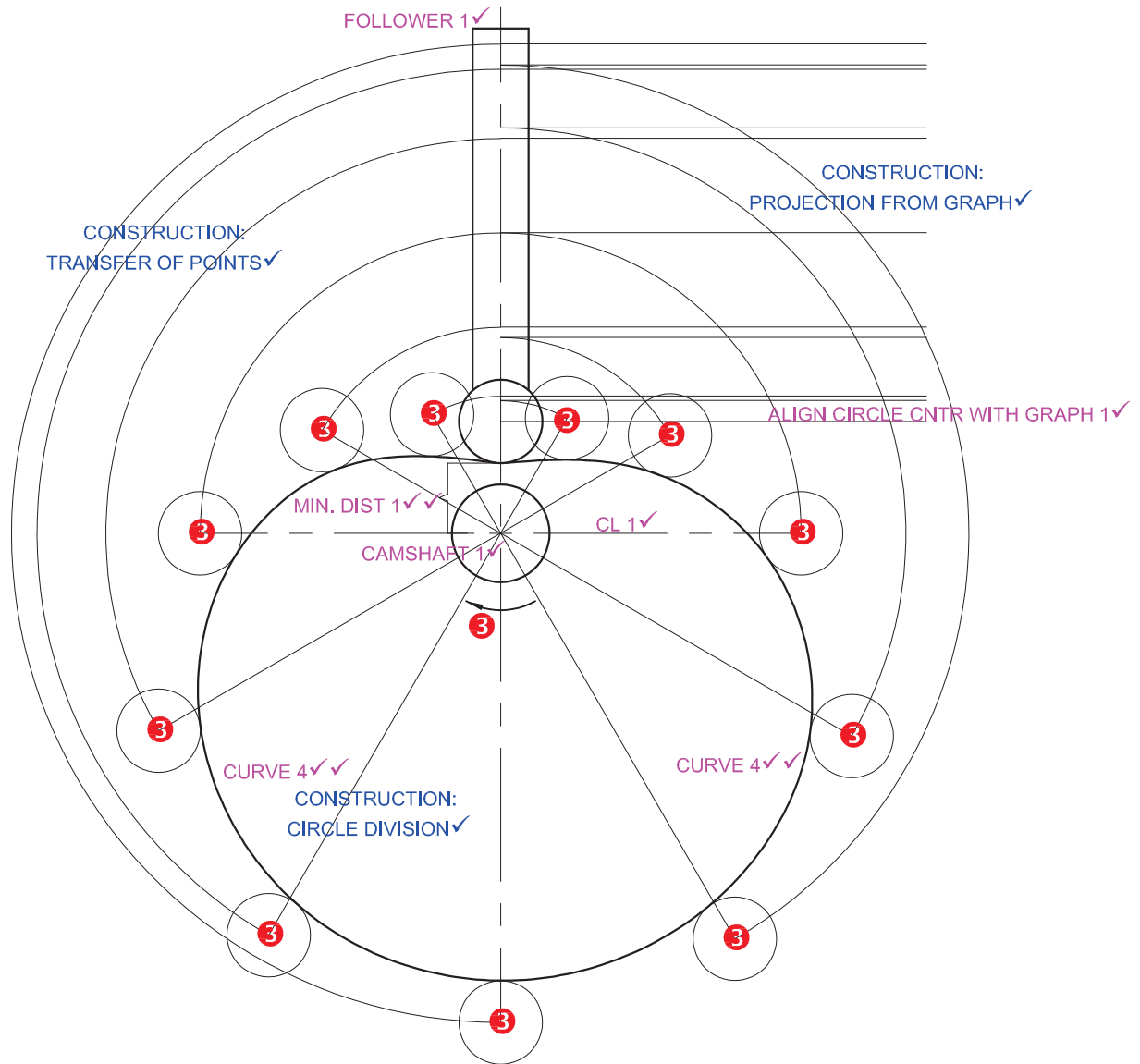
ASSESSMENT CRITERIA		
1	CENTRE LINES + CONSTR'	6
2	HELICES + SHAFT + DIRECTION	18
<b>SUBTOTAL</b>		<b>24</b>

PAPER 2 QUESTION 2.1  
GRADE 12  
NOVEMBER 2012  
MEMORANDUM



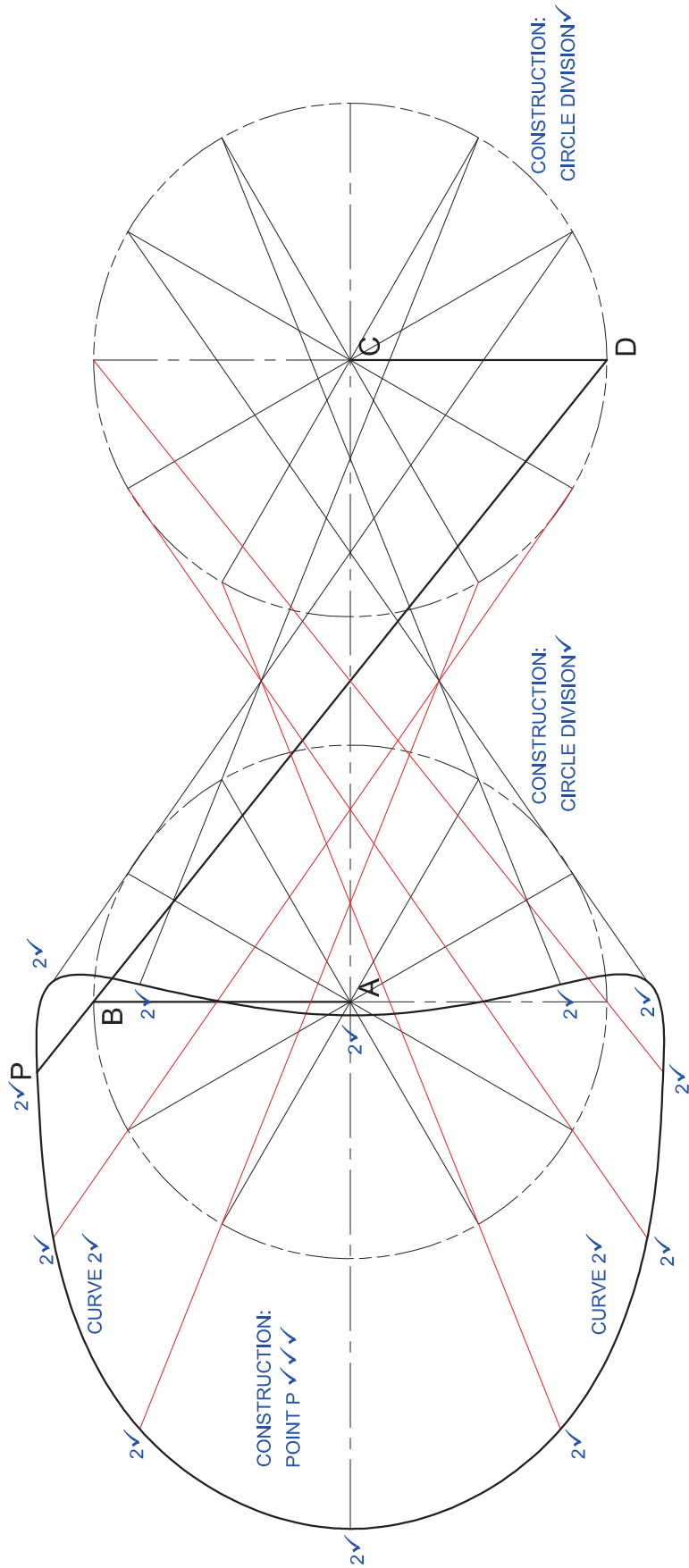
ASSESSMENT CRITERIA	
1	GIVEN
2	CONSTRUCTION
3	LOCUS + CURVE
<b>SUBTOTAL</b>	
<b>TOTAL</b>	

PAPER 2 QUESTION 2.2  
 GRADE 12  
 NOVEMBER 2012  
 MEMORANDUM



ASSESSMENT CRITERIA	
1. FOLLOWER + MIN. DIST'+ CENTRE LINE + CAMSHAFT	6
2. CONSTRUCTION	3
3. PLOTTING + DIRECTION	6
4. CURVE	4
<b>2.1 SUBTOTAL</b>	<b>19</b>

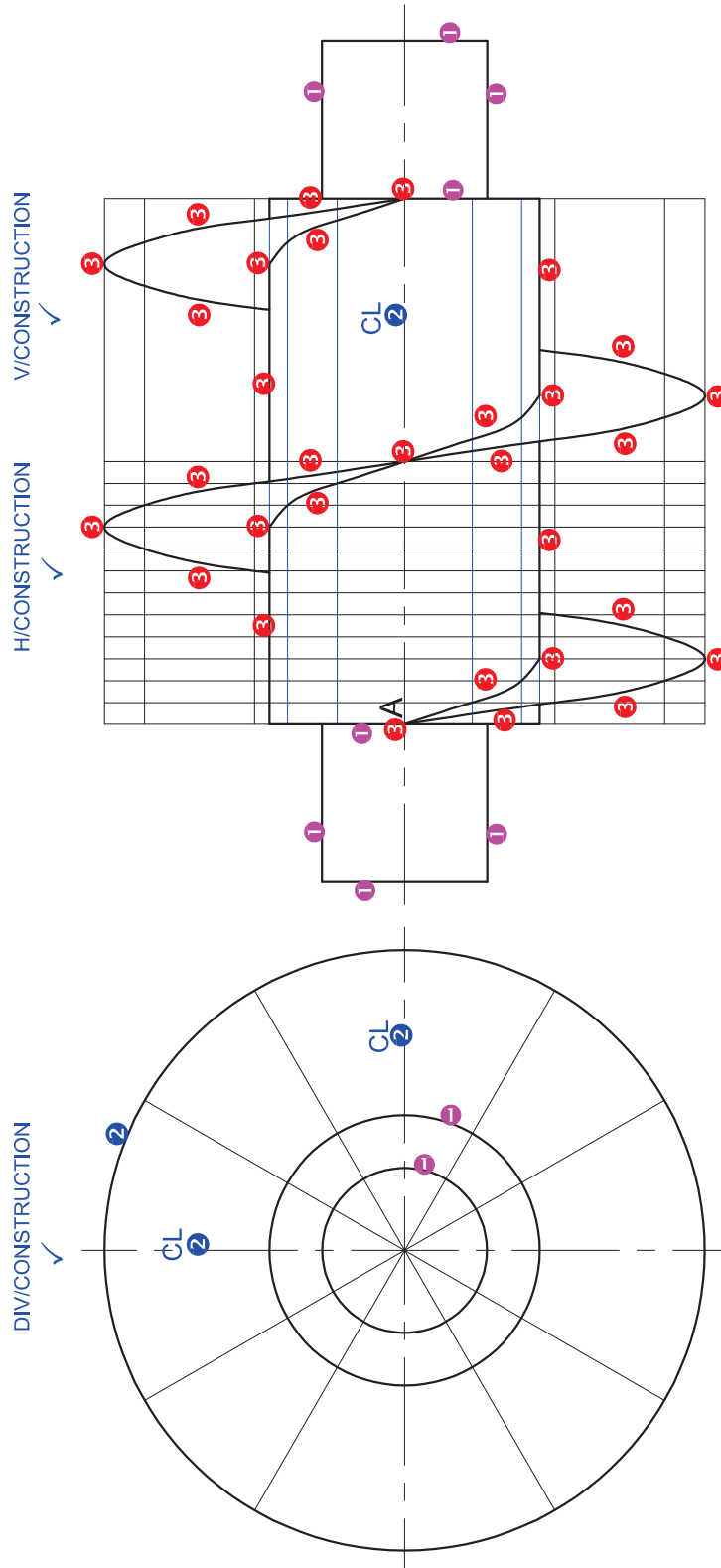
PAPER 2 QUESTION 2.1  
 GRADE 12  
 Feb.-Mar. 2012  
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ASSESSMENT CRITERIA	
1. CONSTRUCTION	5
2. LOCUS OF P	14
<b>2.2 SUBTOTAL</b>	<b>19</b>

PAPER 2 QUESTION 2.2  
 GRADE 12  
 Feb.-Mar. 2012  
 MEMORANDUM



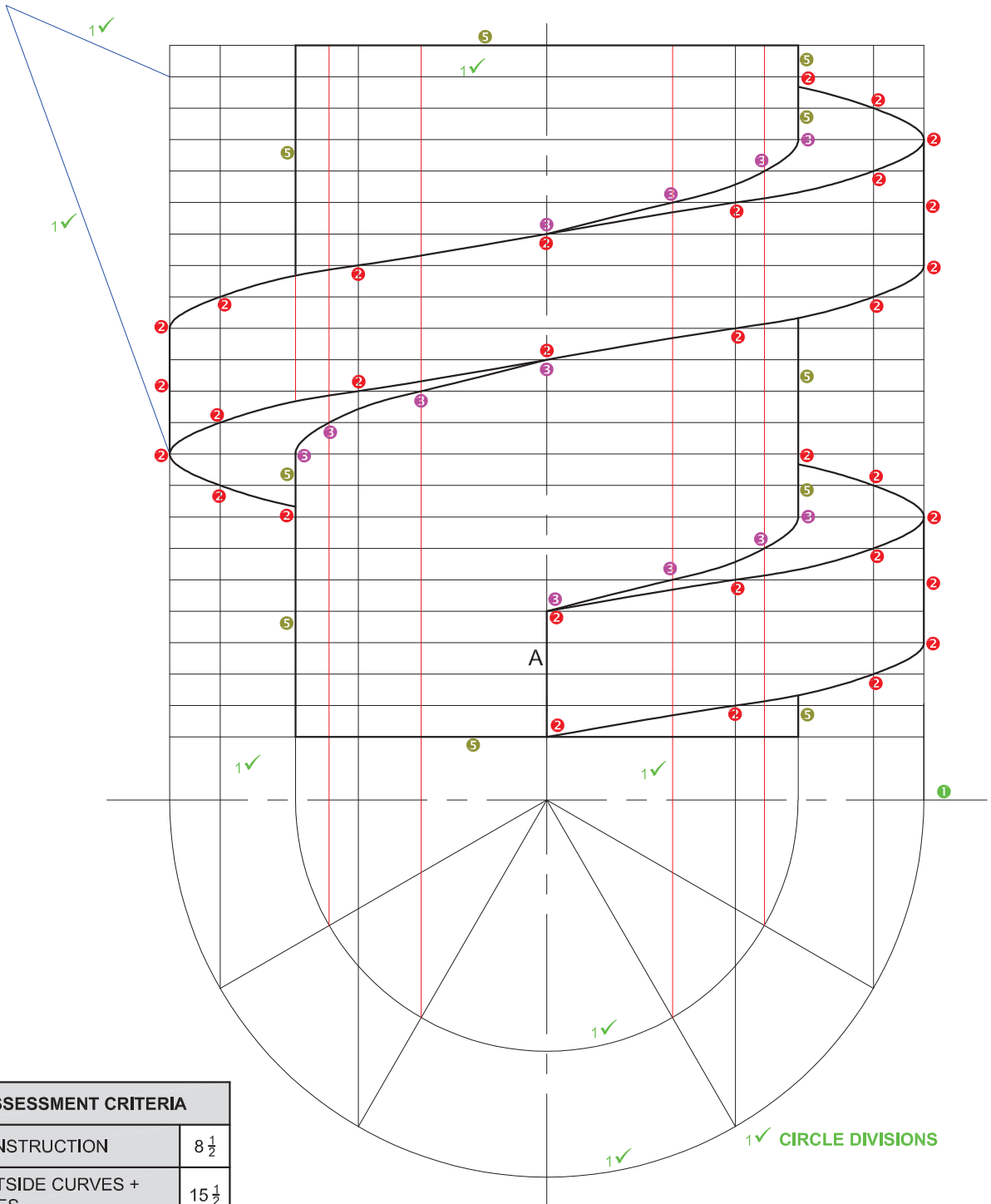


**ASSESSMENT CRITERIA**

GIVEN	=	5
CENTRE LINES + CONSTR'	=	5
HELIX	=	17
<b>TOTAL</b>	<b>=</b>	<b>27</b>

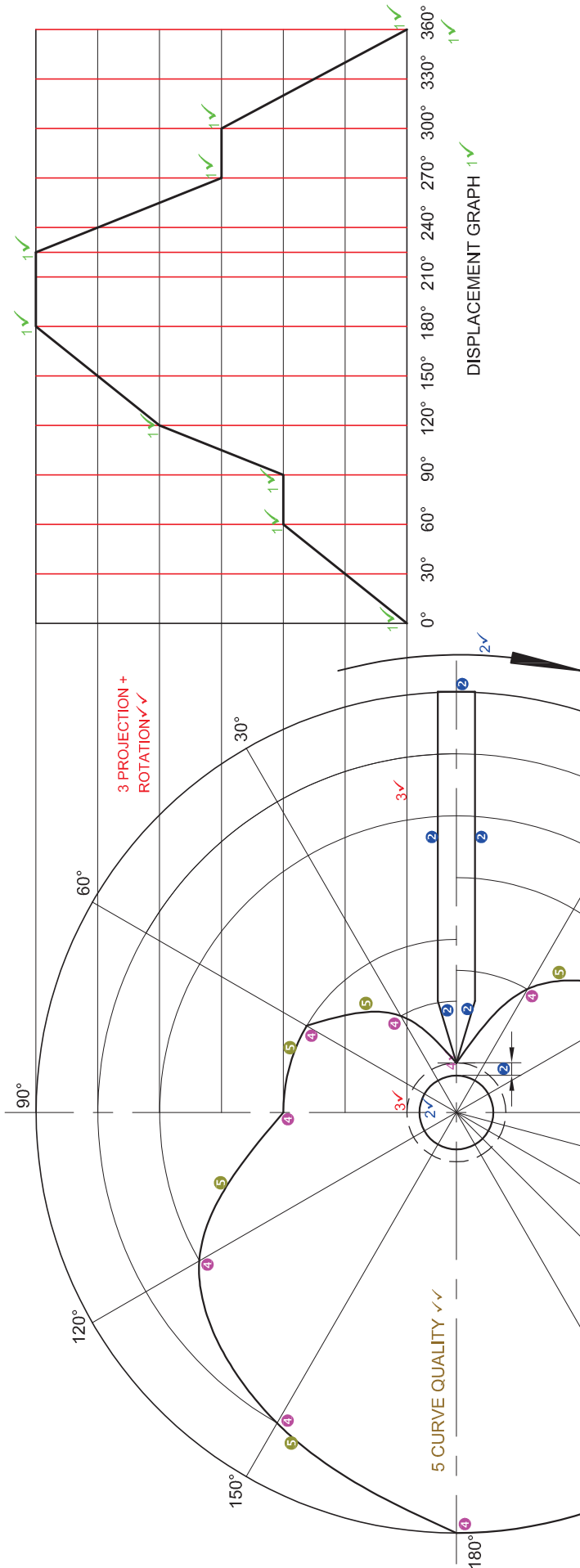
PAPER 2 QUESTION 2  
 GRADE 12  
 NOVEMBER  
 MEMORANDUM

4 ✓✓✓✓ FOR THE QUALITY OF ALL THE CURVES



ASSESSMENT CRITERIA	
1. CONSTRUCTION	8 ½
2. OUTSIDE CURVES + LINES	15 ½
3. INSIDE CURVES	6
4. QUALITY OF CURVES	4
5. SHAFT	5
<b>TOTAL</b>	<b>39</b>

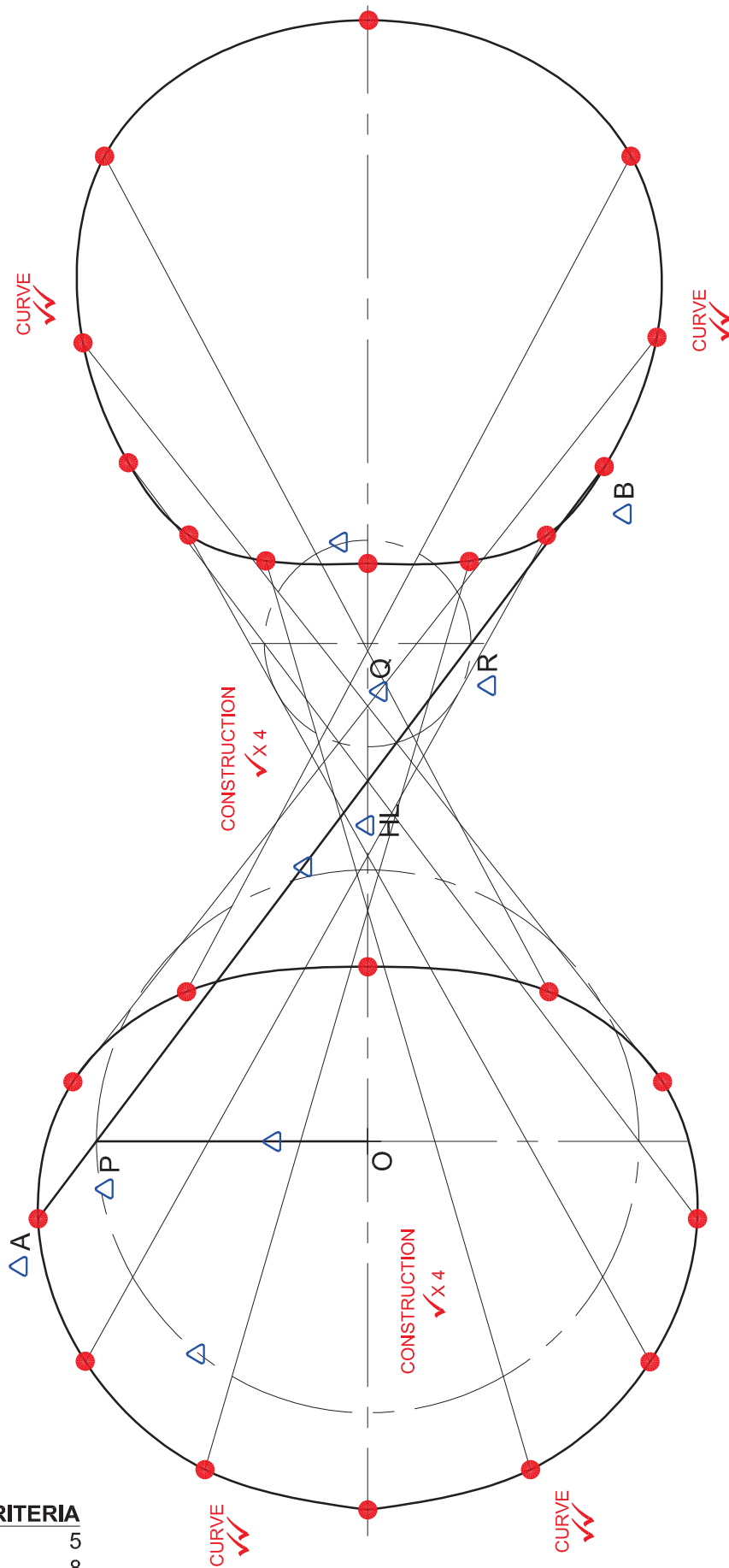
PAPER 2 QUESTION 2  
 GRADE 12  
 FEB. - MARCH 2011  
 MEMORANDUM



ASSESSMENT CRITERIA	
1. GRAPH	11
2. FOLLOWER + SHAFT + ARROW	5
3. CONSTRUCTION	4
4. CAM POINTS	7
5. CURVE + QUALITY	6
<b>TOTAL</b>	<b>33</b>

PAPER 2 QUESTION 2  
 GRADE 12  
 NOVEMBER 2010  
 MEMORANDUM

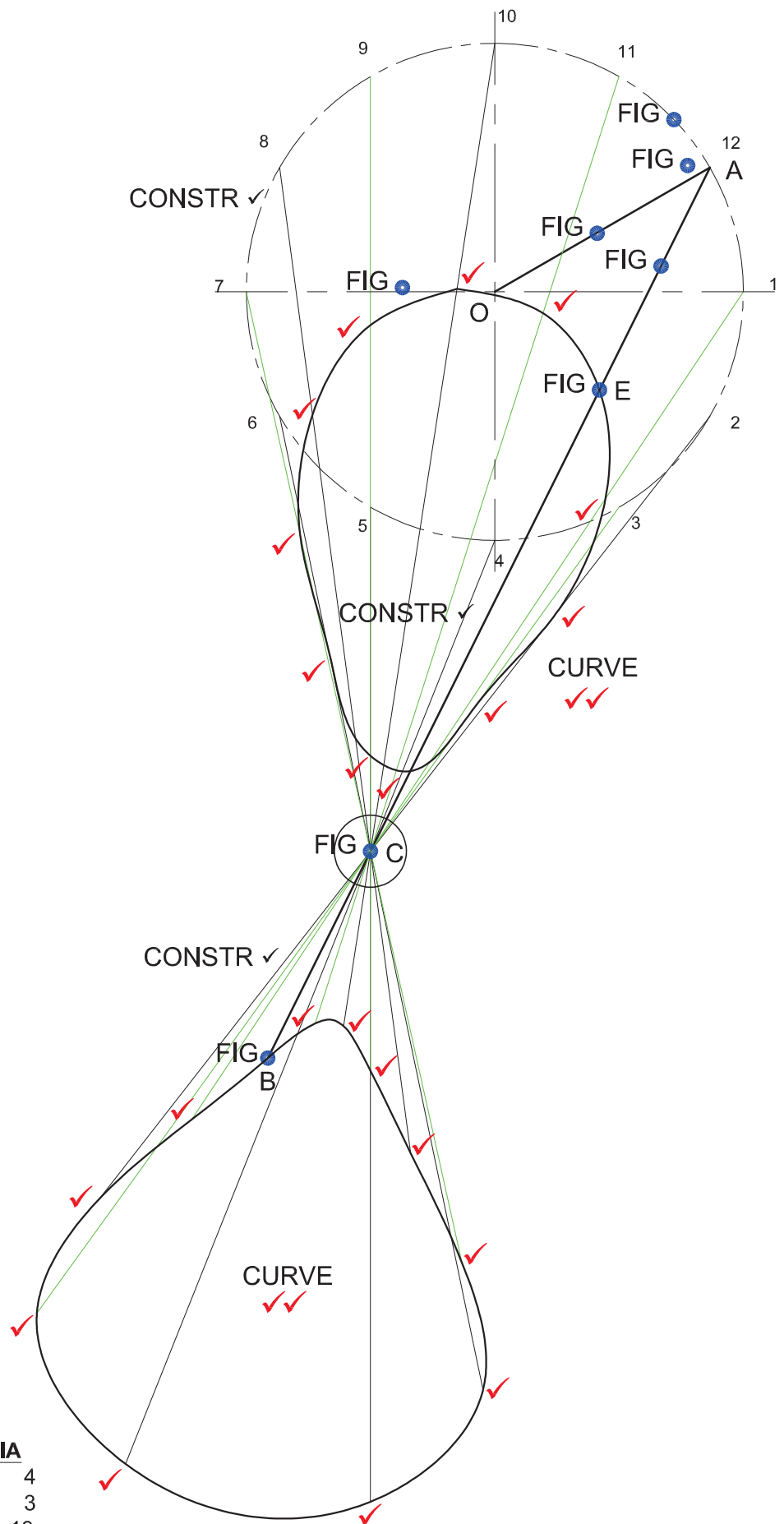




**ASSESSMENT CRITERIA**

GIVEN + LABELS	5
CONSTRUCTION	8
LOCUS A + CURVE	10
LOCUS B + CURVE	10
<b>TOTAL</b>	<b>33</b>

PAPER 2 QUESTION 2  
GRADE 12 NOVEMBER 2009  
MEMORANDUM

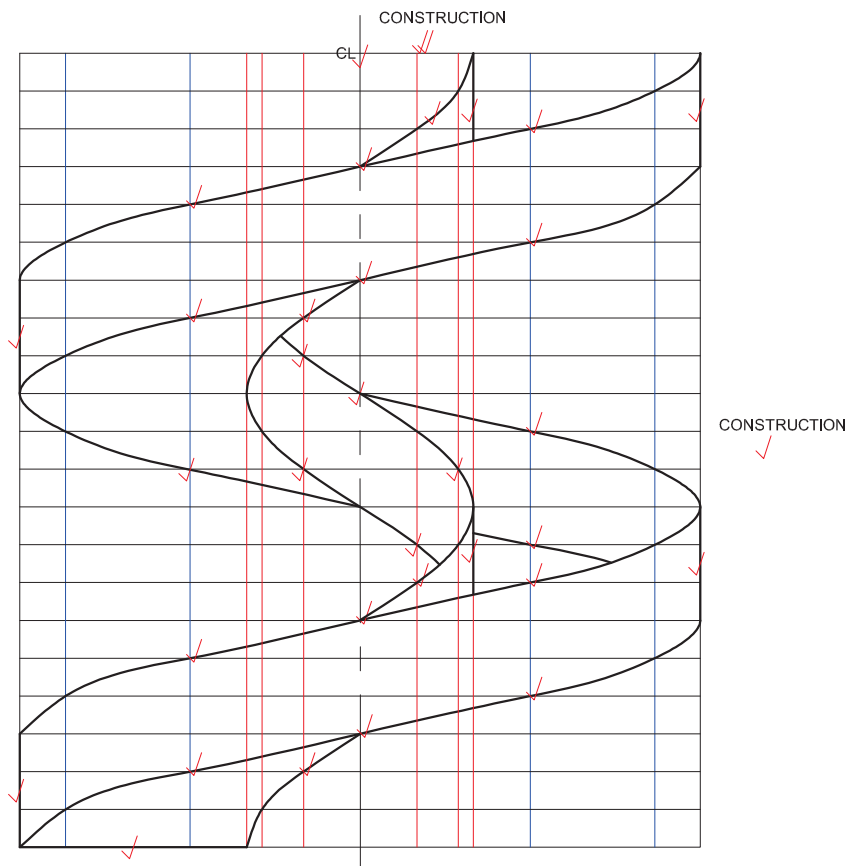
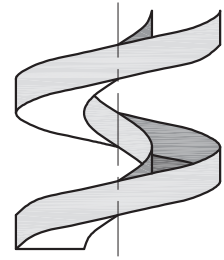
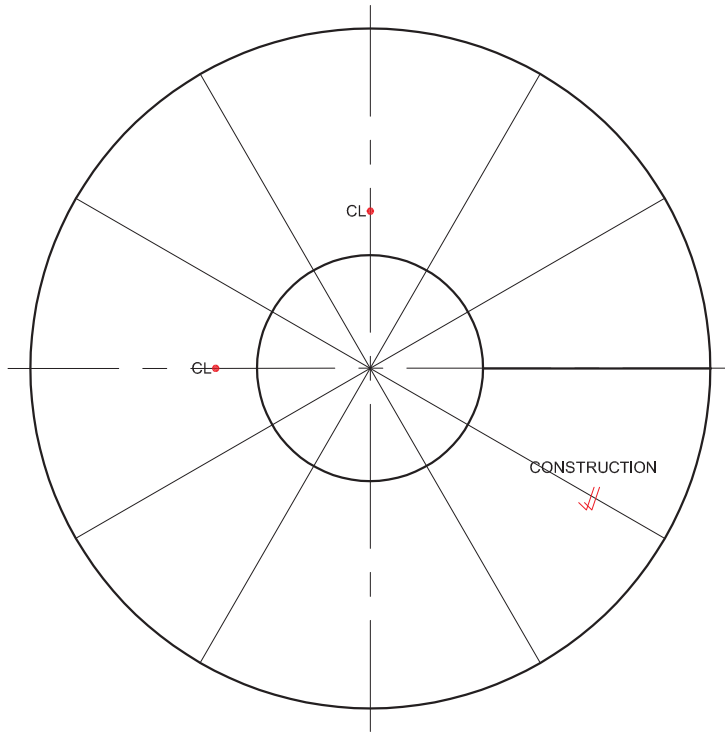


**ASSESSMENT CRITERIA**

GIVEN FIGURE	4
CONSTRUCTION	3
LOCUS B	13
LOCUS E	13
<b>TOTAL</b>	<b>33</b>

PAPER 2 QUESTION 2  
 GRADE 12  
 FEBRUARY/MARCH 2009  
 MEMORANDUM





**ASSESSMENT CRITERIA**

CONSTRUCTION	= 6
TOP VIEW	= 2
DIRECTION	= 4
CENTRE LINES	= 2
HELIX	= 31
<b>TOTAL</b>	<b>= 45</b>

2008 GRADE 12  
PAPER 2  
EXEMPLAR  
QUESTION 2  
MEMORANDUM