



# basic education

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**ENGINEERING GRAPHICS AND DESIGN P2**

**FEBRUARY/MARCH 2017**

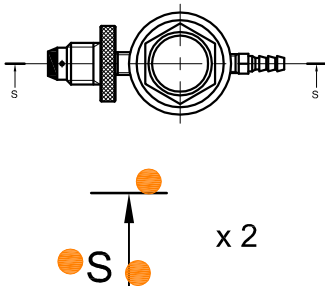
**MEMORANDUM**

**MARKS: 100**

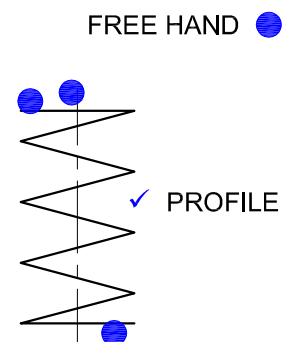
**This memorandum consists of 5 pages.**

<b>ANSWERS</b>		
1	GAS REGULATOR	1
2	www.theonegas.co.za	1
3	MILLING	1
4	AUTOCAD 2016	1
5	2015-10-31	1
6	SOON	1
7	RUBBER	1
8	FULL SECTIONED FRONT VIEW	1
9	FILLET	1
10	B: Ø 17.6                  C: 125                  D: 75	3
11	75°	1
12	THIN PART / RUBBER	1
13	PART SECTIONING	1
14	KNURLING	1
15	CAP	1
16	8	1
17	TO KEEP THE RUBBER PIPE IN POSITION	2
18	<i>See below</i>	3
19		3
20		4
<b>TOTAL</b>		<b>30</b>

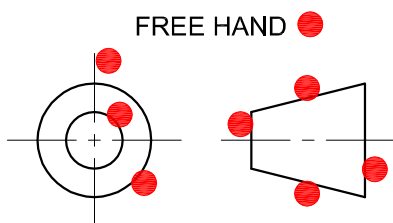
ANSWER 18

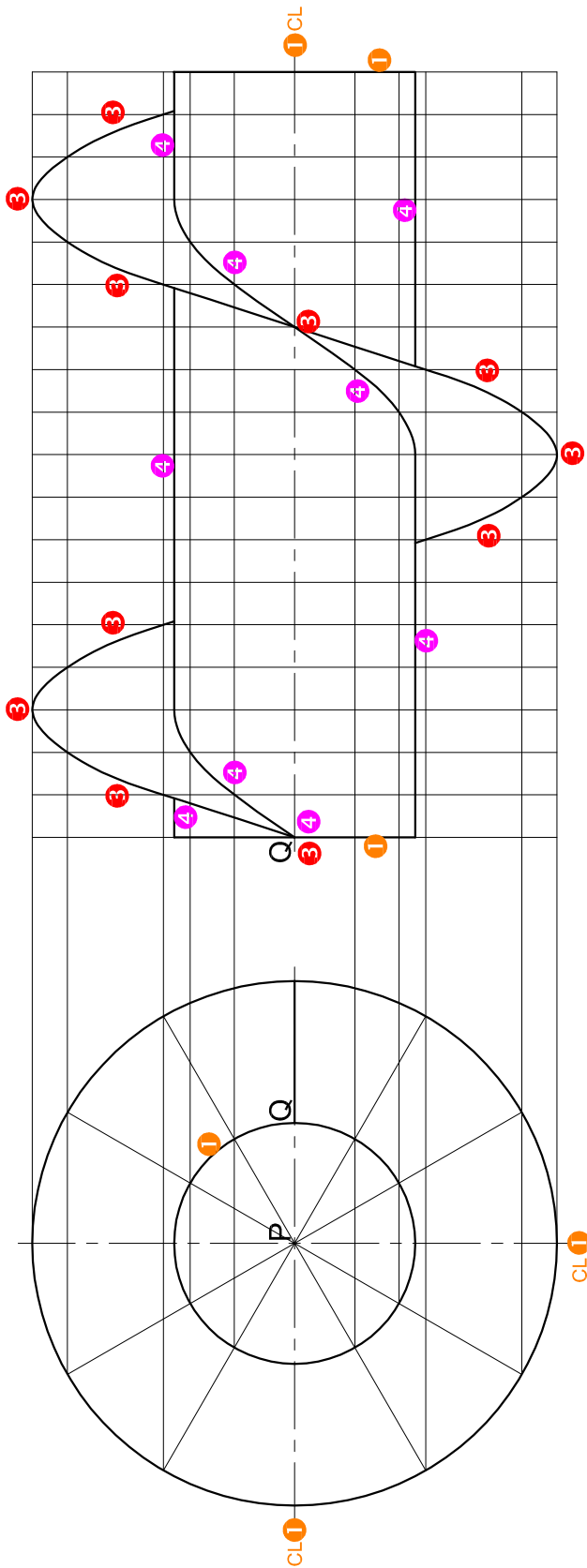


ANSWER 19: CONVENTION - COIL SPRING



ANSWER 20: PROJECTION SYMBOL



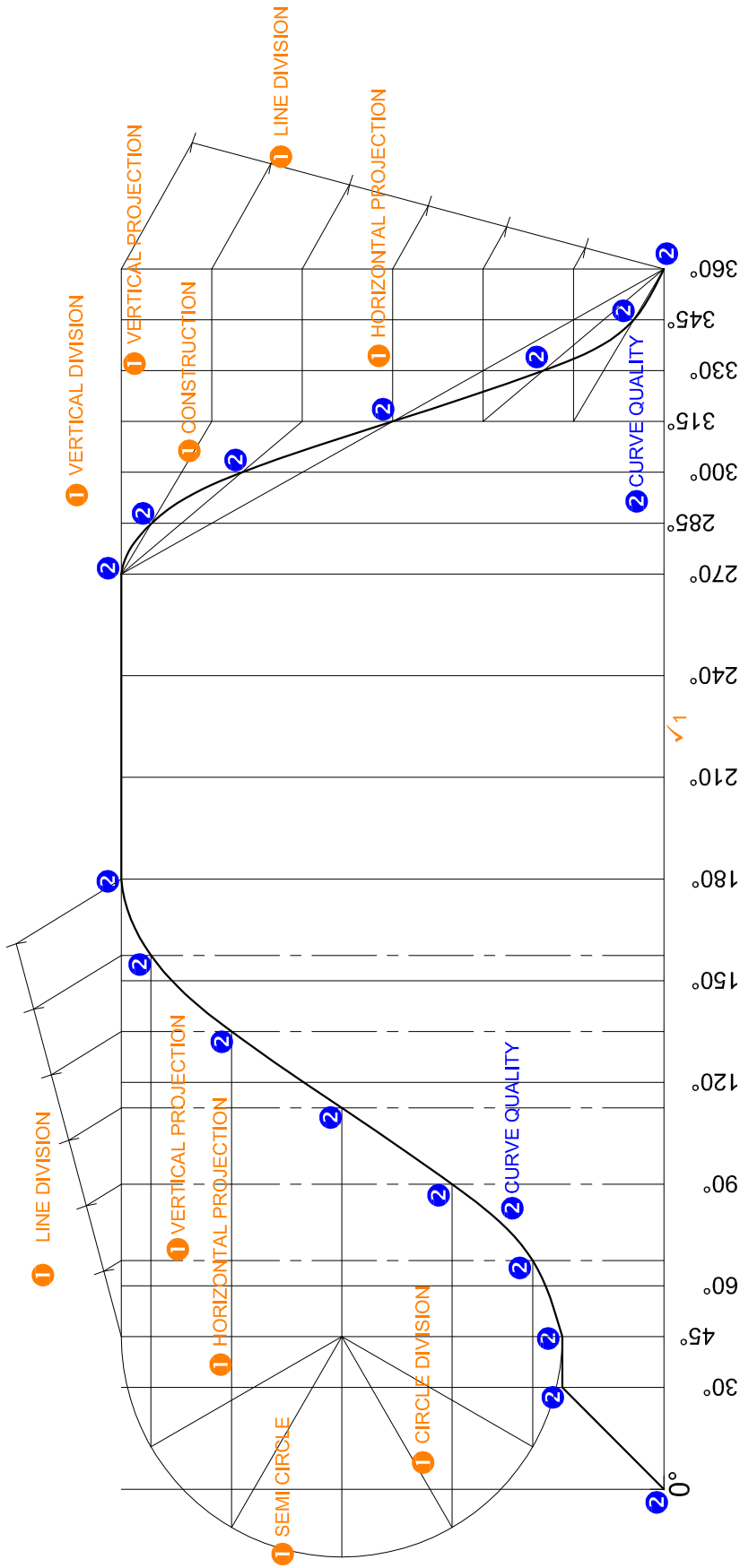


5 ✓✓ CURVE QUALITY FOR BOTH HELICES

- 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

PAPER 2 QUESTION 2.1  
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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>	

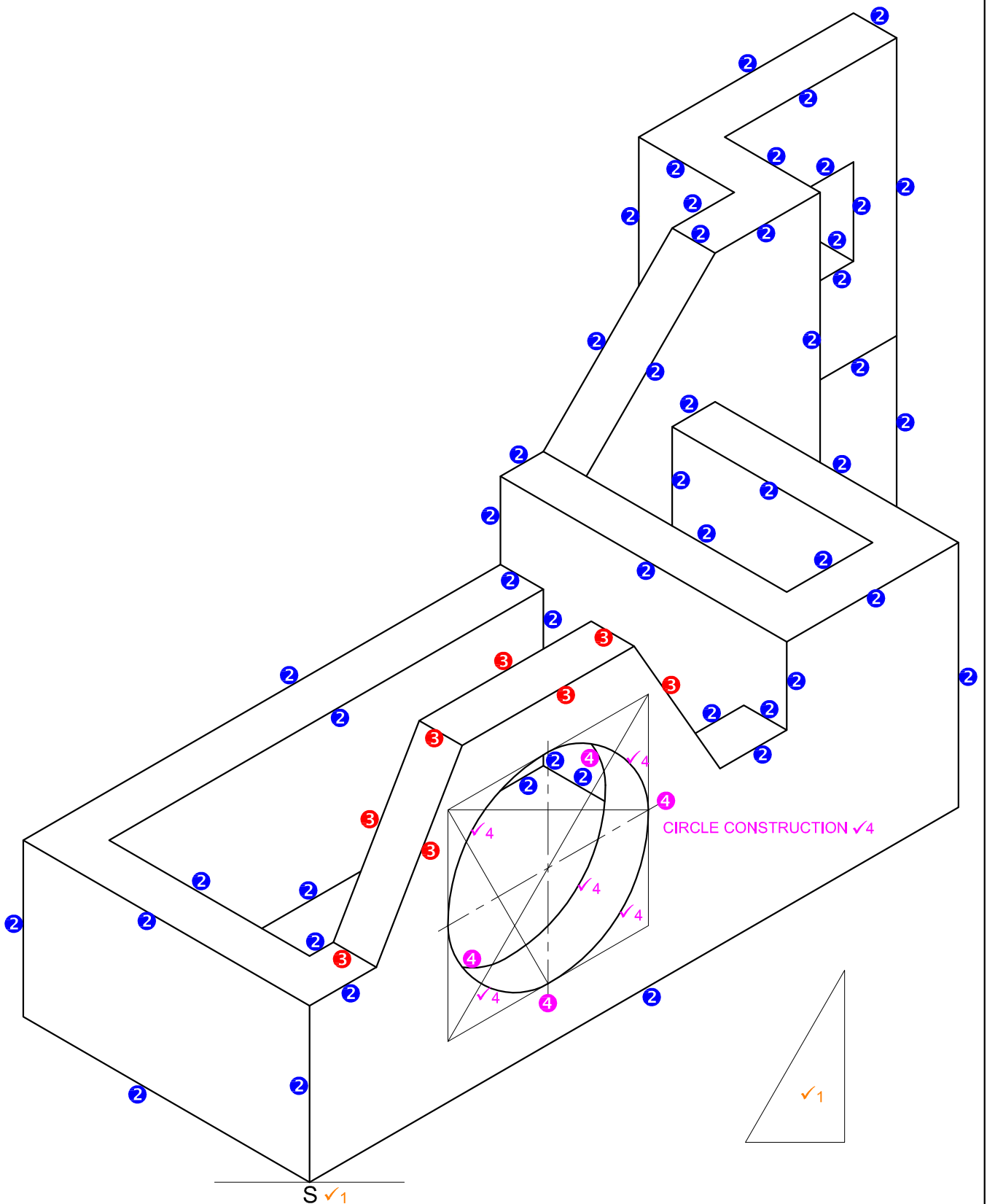


GRAPH OF DISPLACEMENT **3**  
 HORIZONTAL SCALE - 180mm = 360° **3**

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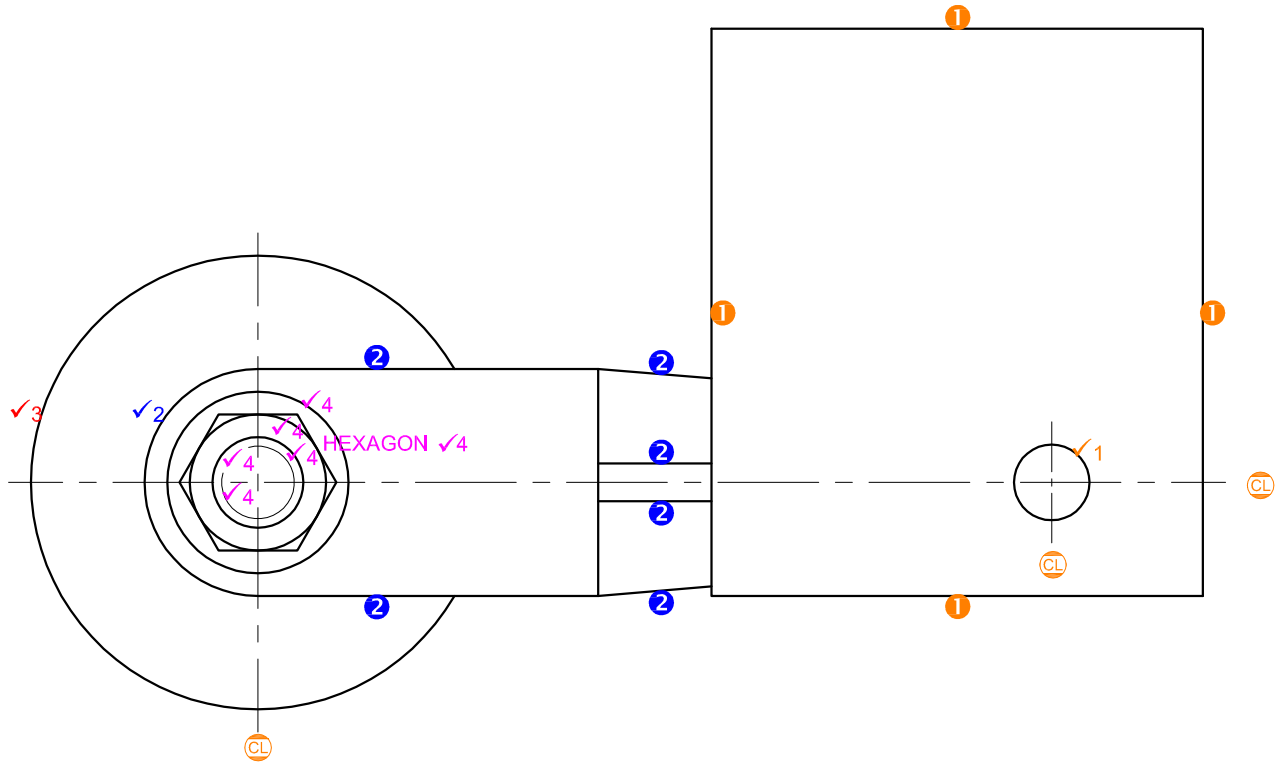
ASSESSMENT CRITERIA 2.2	
1	CONSTRUCTION
2	POINTS + CURVES
3	LABELS
PENALTIES (-)	
<b>SUBTOTAL</b>	

**16**



ASSESSMENT CRITERIA		
1	AUXILIARY VIEW + PLACEMENT	2
2	FRONT + REAR SECTION	25
3	HEXAGON	4
4	CIRCLE + CL	8
<b>TOTAL</b>		<b>39</b>

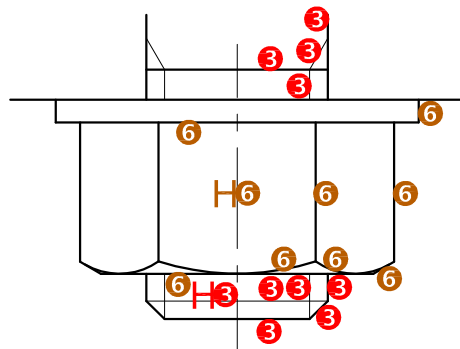
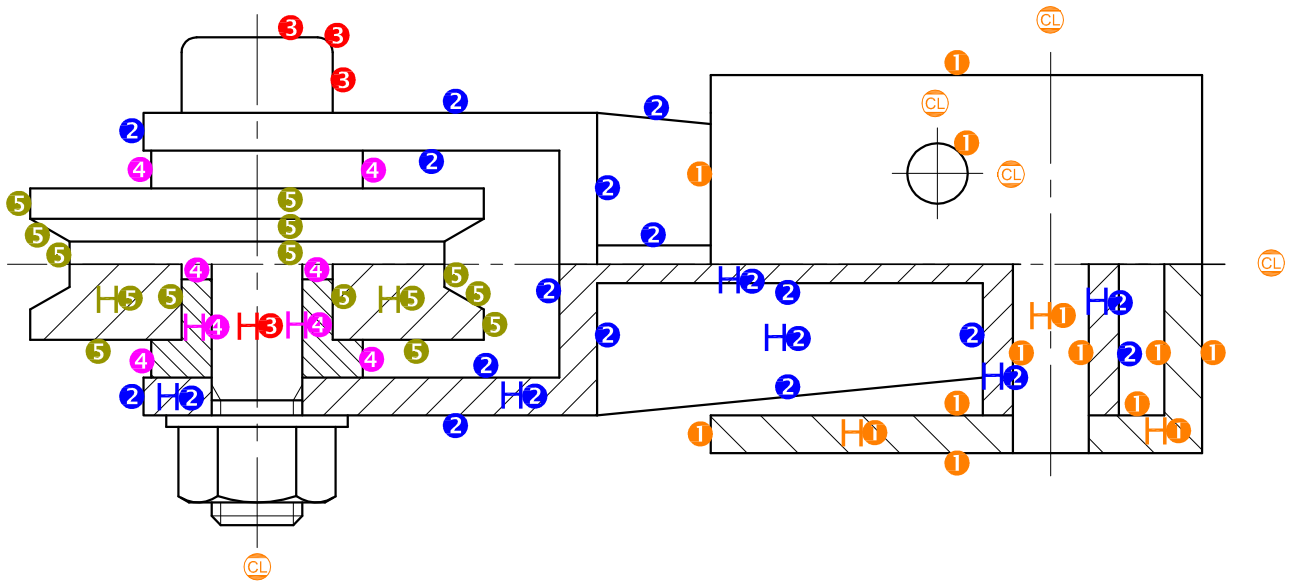
PAPER 2 QUESTION 3  
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1 MARK FOR EVERY  
COMPONENT CORRECTLY  
ASSEMBLED ( 10 PARTS - 1) = 9

ASSESSMENT CRITERIA		
FRONT VIEW		
1	HOUSING + PIN	3
2	FORK	4
3	PULLEY	1
4	M12 BOLT + WASHER + M12 NUT	6
<b>SUBTOTAL</b>		<b>14</b>

PAPER 2 QUESTION 4  
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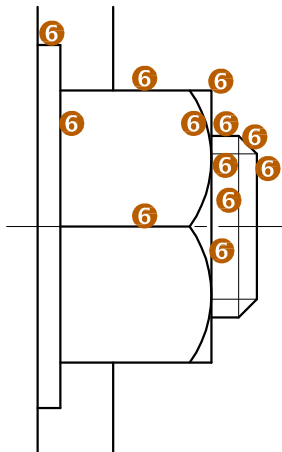
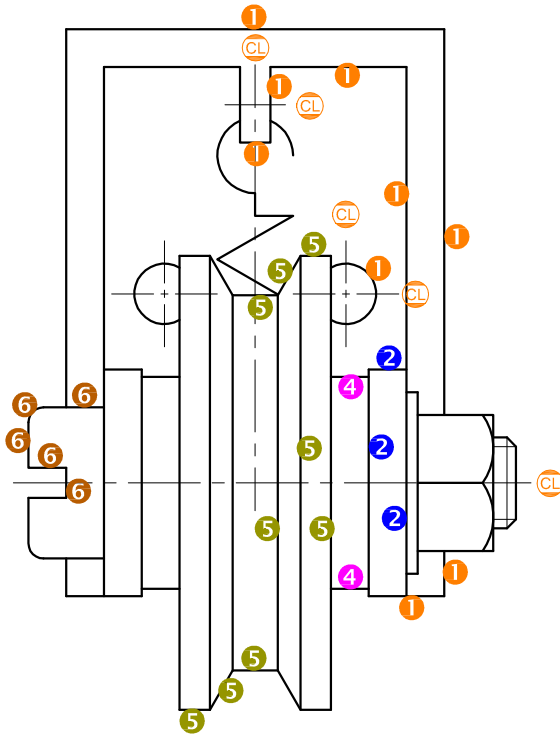
DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT

ASSESSMENT CRITERIA		
SECTIONAL TOP VIEW		
1	HOUSING + PIN	7
2	FORK	10 $\frac{1}{2}$
3	M12 BOLT	7
4	BUSH	4
5	PULLEY	7 $\frac{1}{2}$
6	WASHER + M12 NUT	4 $\frac{1}{2}$
<b>SUBTOTAL</b>		<b>40 <math>\frac{1}{2}</math></b>

PAPER 2 QUESTION 4  
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**3. SPRING MARK ALLOCATION**

FREEHAND	1
TOP CURVE	2
SPRING PROFILE	1
	2



DETAIL OF MARK ALLOCATION FOR WASHER, M12 NUT AND M12 BOLT

ASSESSMENT CRITERIA		
LEFT VIEW		
1	HOUSING	4 $\frac{1}{2}$
2	FORK	1 $\frac{1}{2}$
3	SPRING	2
4	BUSH	1
5	PULLEY	4 $\frac{1}{2}$
6	M12 BOLT + WASHER + M12 NUT	8 $\frac{1}{2}$
<b>SUBTOTAL</b>		<b>22</b>

PAPER 2 QUESTION 4  
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