



# basic education

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

## **SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS**

**ENGINEERING GRAPHICS AND DESIGN P1**

**2022**

**MARKS: 100**

**These marking guidelines consist of 7 pages.**

ANSWERS		
1	884939	1
2	1 : 1300	1
3	PROJECT NUMBER	1
4	MULLER ARCHITECTS	1
5	DIRECTION OF OPENING	1
6	RODDING EYE	1
7	2000	1
8	BUILDING LINE	1
9	SEWERAGE LINE	1
10	MUST BE DEMOLISHED/REMOVED	1
11	BRICK PAVING	1
12	ELECTRICITY METER / WATT METER	1
13	PARKING FOR DISABLED PEOPLE	1
14	18,28	2
15	YELLOW	1
16	18	2
17	SOUTH EAST	2
18	See below	3
19		3
20		4
<b>TOTAL</b>		<b>30</b>

**ANSWER 18**  
 Show ALL calculations.  
 APPLYING CORRECT FORMULA ✓

$$\begin{aligned}
 P &= AB + BC + CD + DE + EF + \\
 &FG + GA \\
 &= 117.7 + 13.7 + 115.1 + 8.3 + \\
 &88.3 + 39.7 + 102.8 \\
 &= 485.6 \checkmark \text{ m}
 \end{aligned}$$

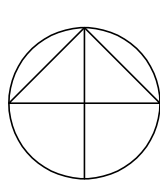
ANSWER IN METRES ✓

**ANSWER 19**  
 Show ALL calculations.  
 APPLYING CORRECT FORMULA ✓

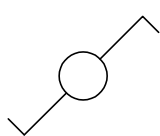
$$\begin{aligned}
 A &= (15,4 \times 24,5) + (39,1 \times 48,0) \\
 &+ (6,0 \times 27,9) \\
 &= 377,3 + 1876,8 + 167,4 \\
 &= 2421,5 \checkmark \text{ m}^2
 \end{aligned}$$

**ANSWER 20**

20.1



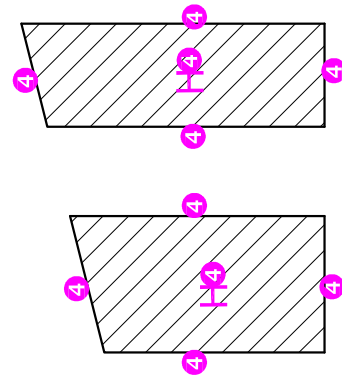
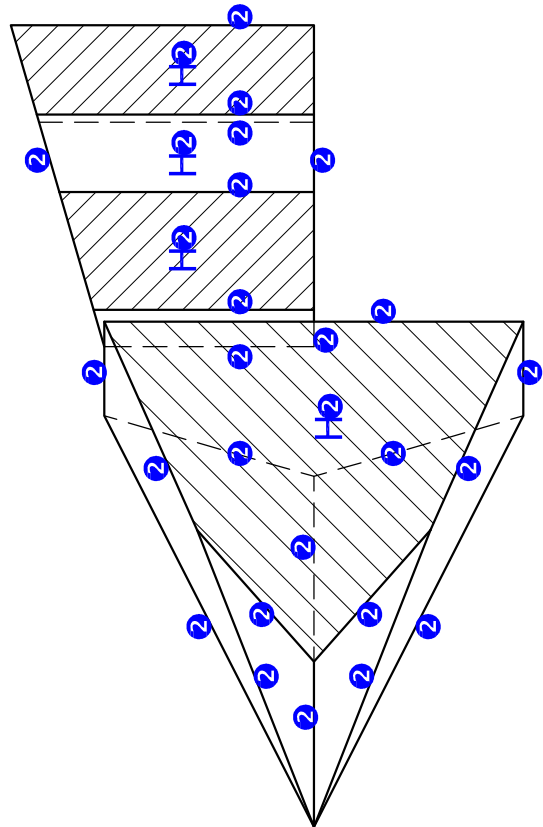
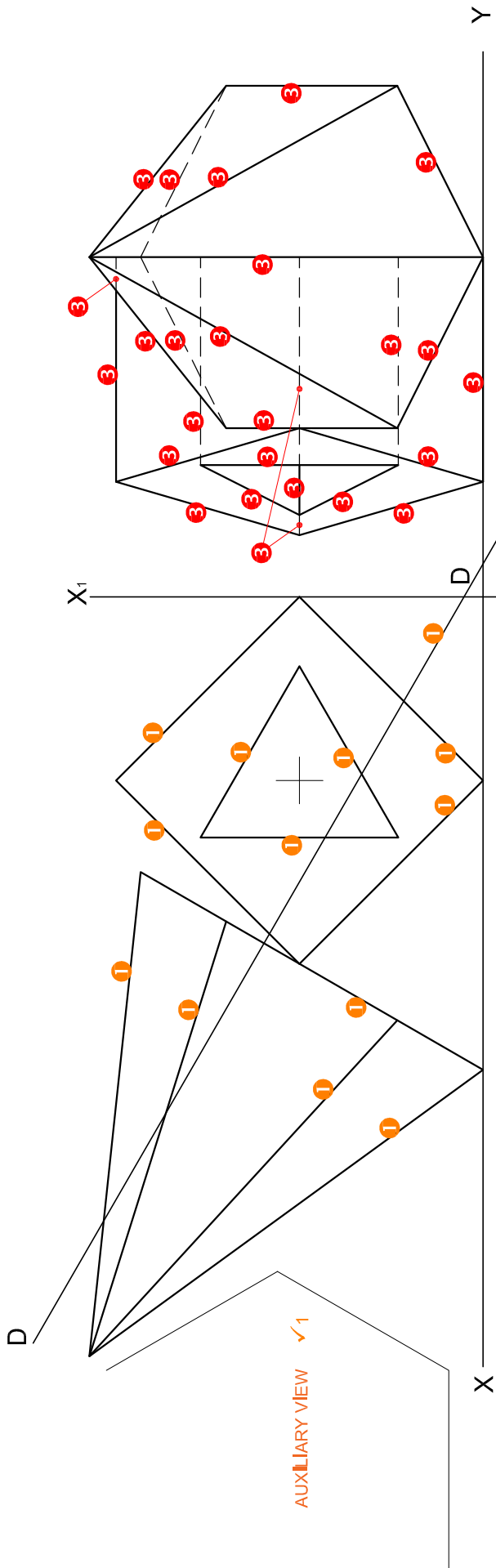
20.2



20.1 NORTH POINT  
 CIRCLE 0.5  
 VERTICAL LINE 0.5  
 HORIZONTAL LINE 0.5  
 ANGLED LINES 0.5

20.2 TWO-WAY SWITCH  
 CIRCLE 0.5  
 SWITCH ON ONE SIDE 0.5  
 SWITCH ON OTHER SIDE 0.5

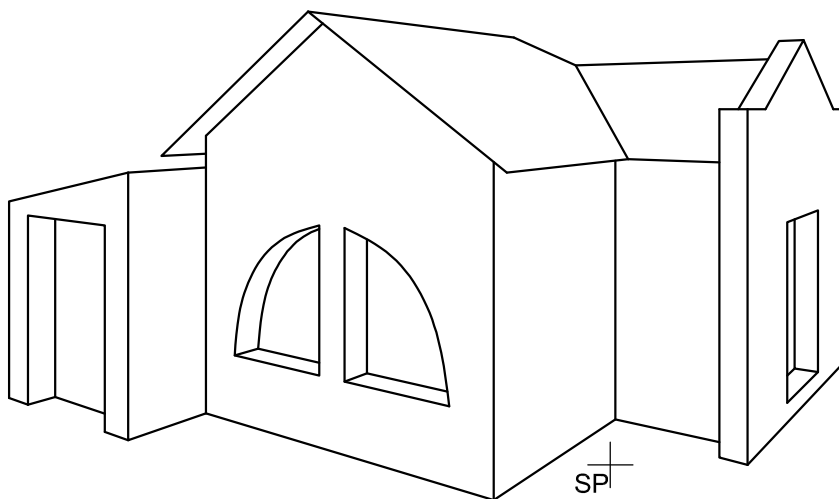
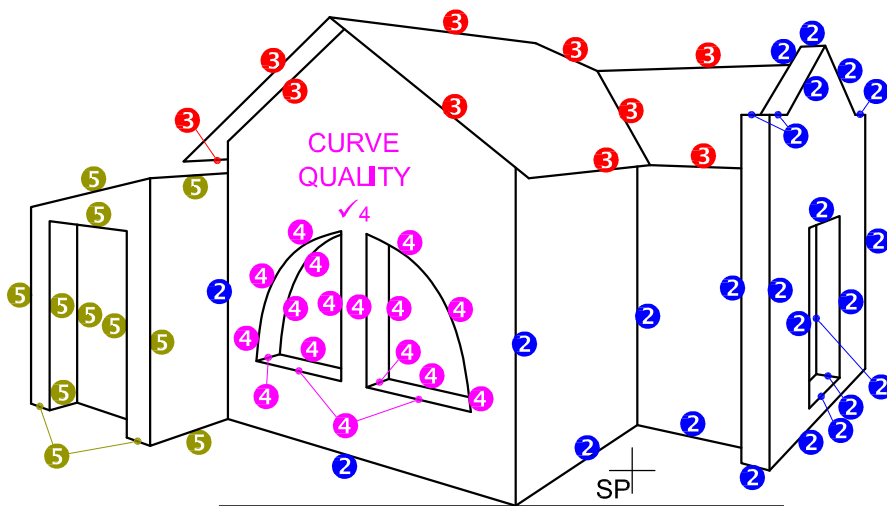
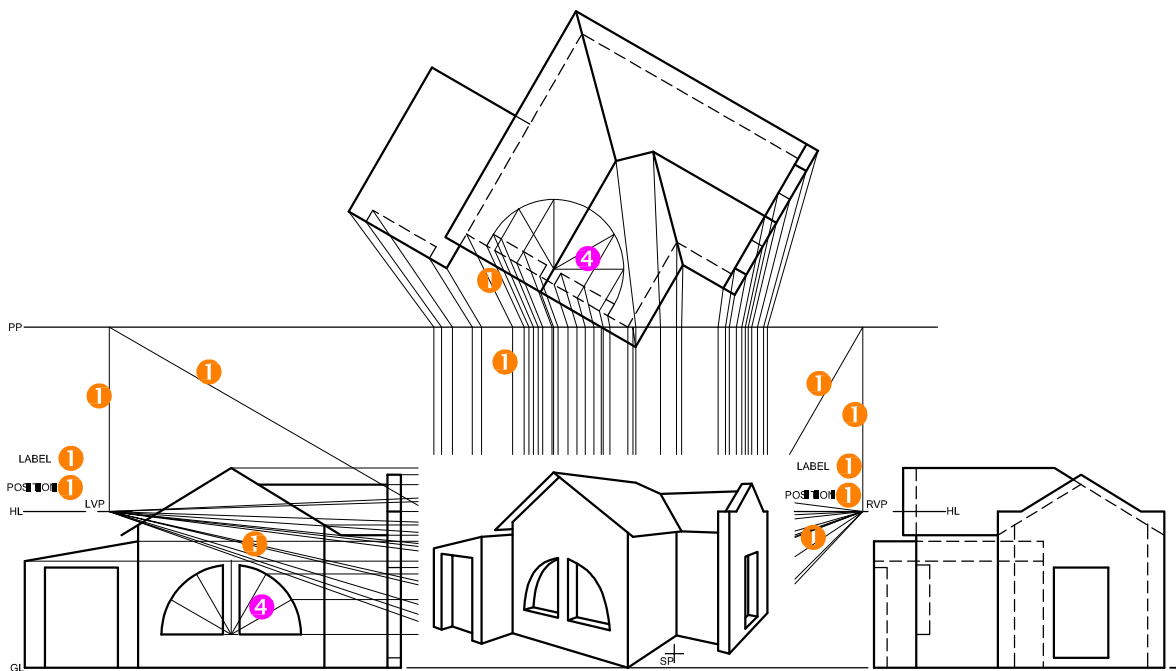
20.1 + 20.2 IN FREEHAND 0.5



4. TRUE SHAPE  
ANY RECOGNIZED METHOD ✓4

ASSESSMENT CRITERIA	
1	FRONT VIEW 7 ½
2	SECTIONED TOP VIEW 14
3	LEFT VIEW 12 ½
4	TRUE SHAPE 6
<b>TOTAL 40</b>	

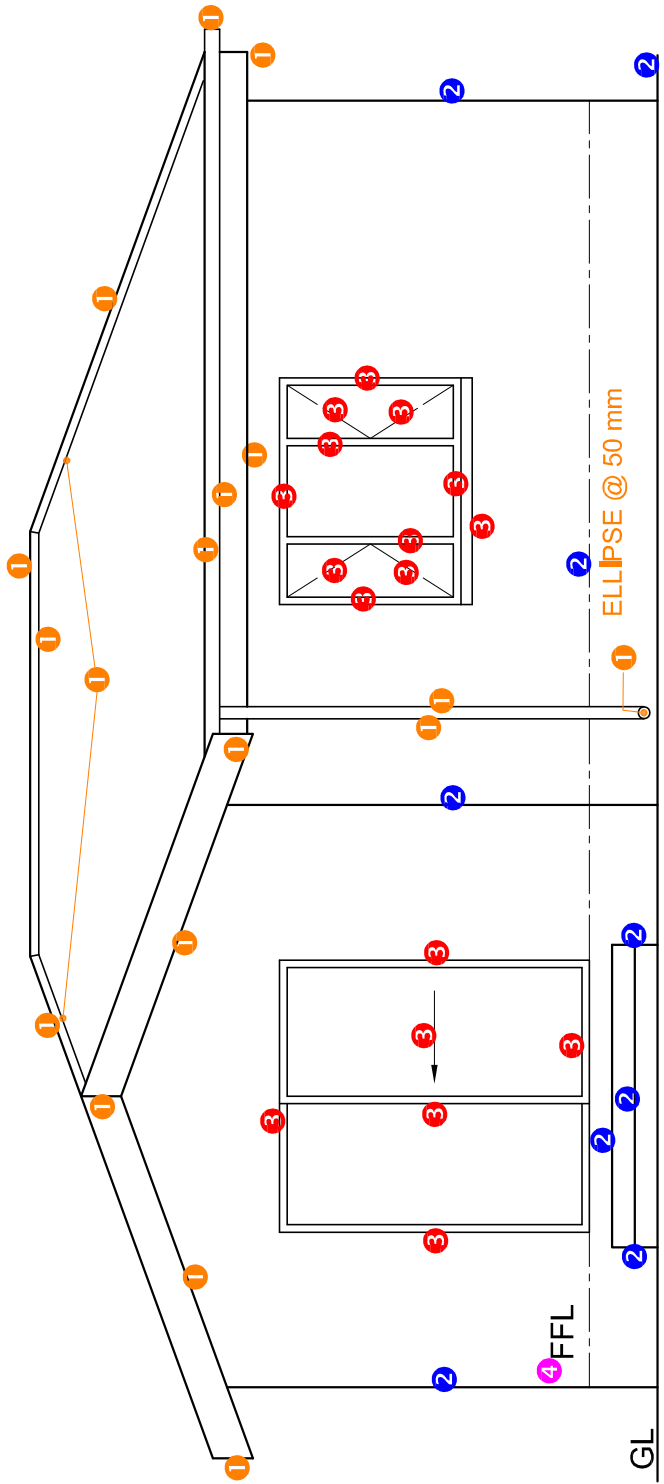
PAPER 1 QUESTION 2  
GRADE 12  
2022  
MARKING GUIDELINES



ASSESSMENT CRITERIA		
1	CONSTRUCTION	6
2	WALLS	11 1/2
3	ROOF	5
4	WINDOWS	10
5	GARAGE	5 1/2
<b>TOTAL</b>		<b>38</b>

PAPER 1 QUESTION 3  
 GRADE 12  
 2022  
 MARKING GUIDELINES





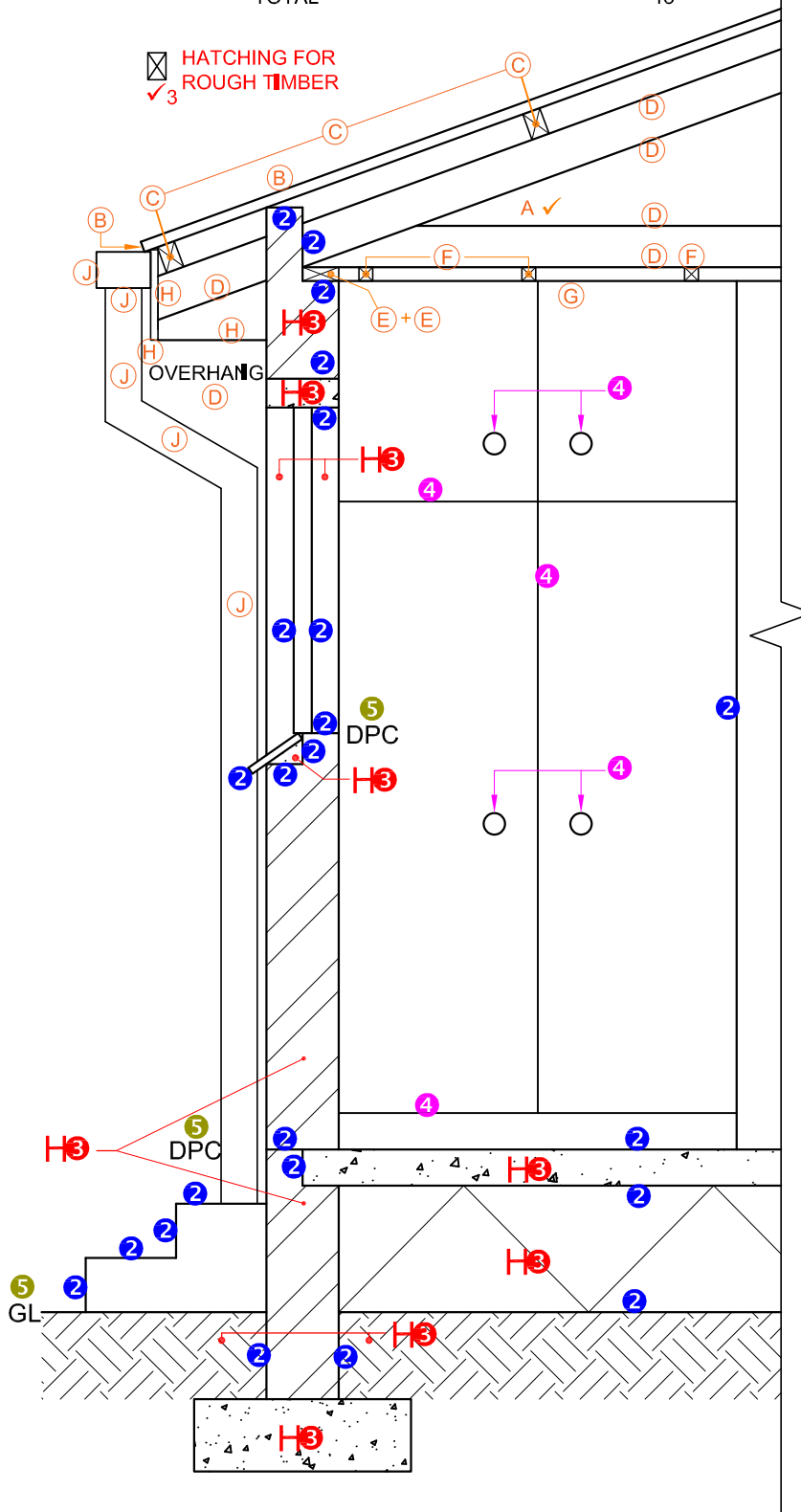
4 SOUTH-WEST ELEVATION

ASSESSMENT CRITERIA	
<b>SOUTH-WEST ELEVATION</b>	
1	ROOF + RWDP 9 1/2
2	WALLS + STEP + FFL 4 1/2
3	DOOR + WINDOW 8 1/2
4	LABELS 1
<b>SUBTOTAL</b>	<b>23 1/2</b>

PAPER 1 QUESTION 4  
 GRADE 12  
 2022  
 MARKING GUIDELINES

**1. MARK ALLOCATION FOR ROOF**

A: ROOF ANGLE	1
B: ROOF SHEET	1
C: PURLIN + SPACING	1.5
D: TRUSS + OVERHANG	3
E: WALL PLATE	1
F: BRANDING + SPACING	1
G: CEILING BOARD	0.5
H: FACIA	1.5
J: GUTTER + RWDP	2.5
<b>TOTAL</b>	<b>13</b>



**SECTION A-A**  
SCALE 1 : 20

ASSESSMENT CRITERIA		
DETAILED SECTION		
1	ROOF DETAIL	13
2	SLAB + WALL + WINDOW + STEP	11 1/2
3	HATCHING	5 1/2
4	BIC	2 1/2
5	LABELS	1 1/2
<b>SUBTOTAL</b>		<b>34</b>

PAPER 1 QUESTION 4  
GRADE 12  
2022  
MARKING GUIDELINES