

**QUESTION 11.5.1:**  
**DESCRIPTIVE GEOMETRY**

**Given:**  
The front view and top view of a wheelbarrow ABCD in first angle-orthographic projection.

- Instructions:**  
Determine the following:
- The true length of line AD
  - The angle of line AD with regards to the vertical plane.
  - By means of construction, the true length of line AB.
  - The true angle of line AB with regard to the vertical plane.
  - By means of construction, the angle and true length of line CD with regards to the vertical plane.
  - Determine by means of projection the true length and horizontal angle of line AA.

- Note:**
- Show all construction lines.
  - Complete the table.

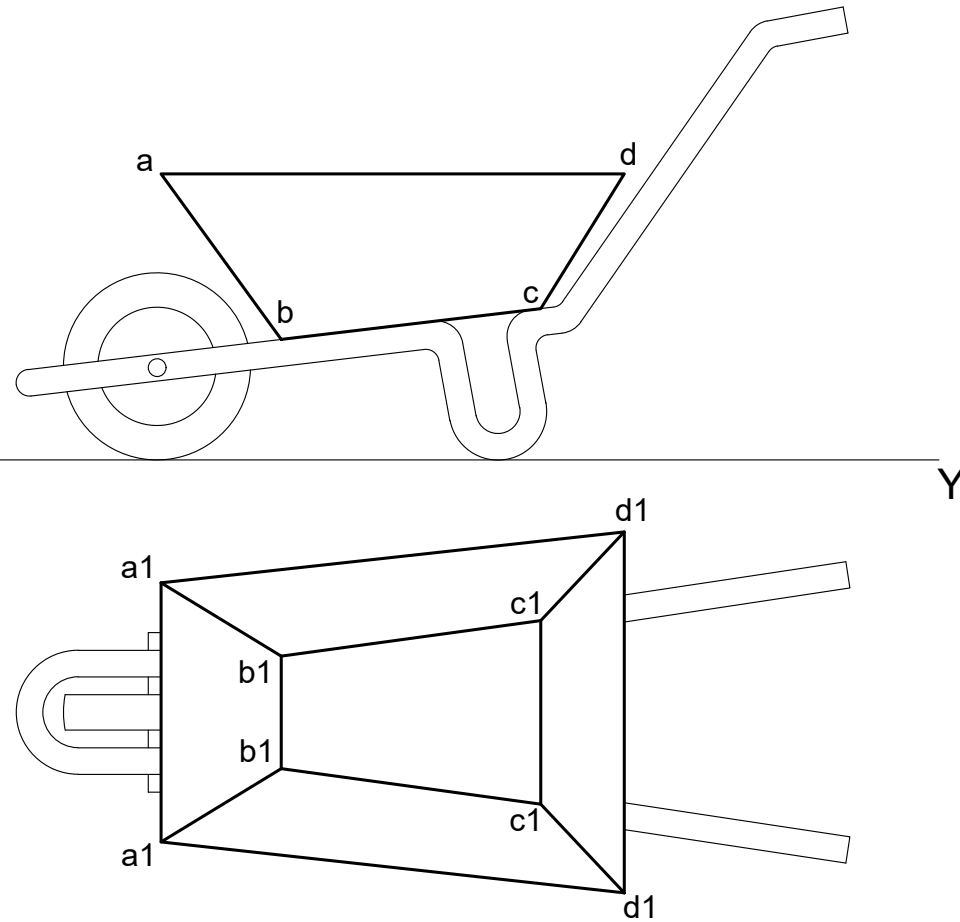


TABLE	
TL - AD	
$\phi$ - AD	
TL - AB	
$\phi$ - AB	
TL - CD	
$\phi$ - CD	
TL - AA	
$\ominus$ - AA	

ASSESSMENT CRITERIA			
1	LINE - AD	2	
2	LINE - AB	6	
3	LINE - CD	6	
4	LINE - AA	5	
5	TABLE	8	
PENALIZING (-1)			
<b>TOTAL</b>		<b>27</b>	

**QUESTION 11.5.2:**  
**DESCRIPTIVE GEOMETRY**

**Given:**  
The front view and top view of a mine shaft EF with tunnels GH, JK and MP in first angle-orthographic projection and according to a scale of 1 : 30 000.

- Instructions:**  
Determine the following in meters:
- The total depth of the mine shaft EF.
  - The angle of the mine shaft with regards to the horizontal plane.
  - By means of projection, the true length and horizontal angle tunnel GH forms.
  - The true length and horizontal angle of tunnel JK. Use the construction method.
  - The total length of tunnel MP.

- Note:**
- Show all constructions and calculations
  - Complete the table
  - Show all lengths in meter.

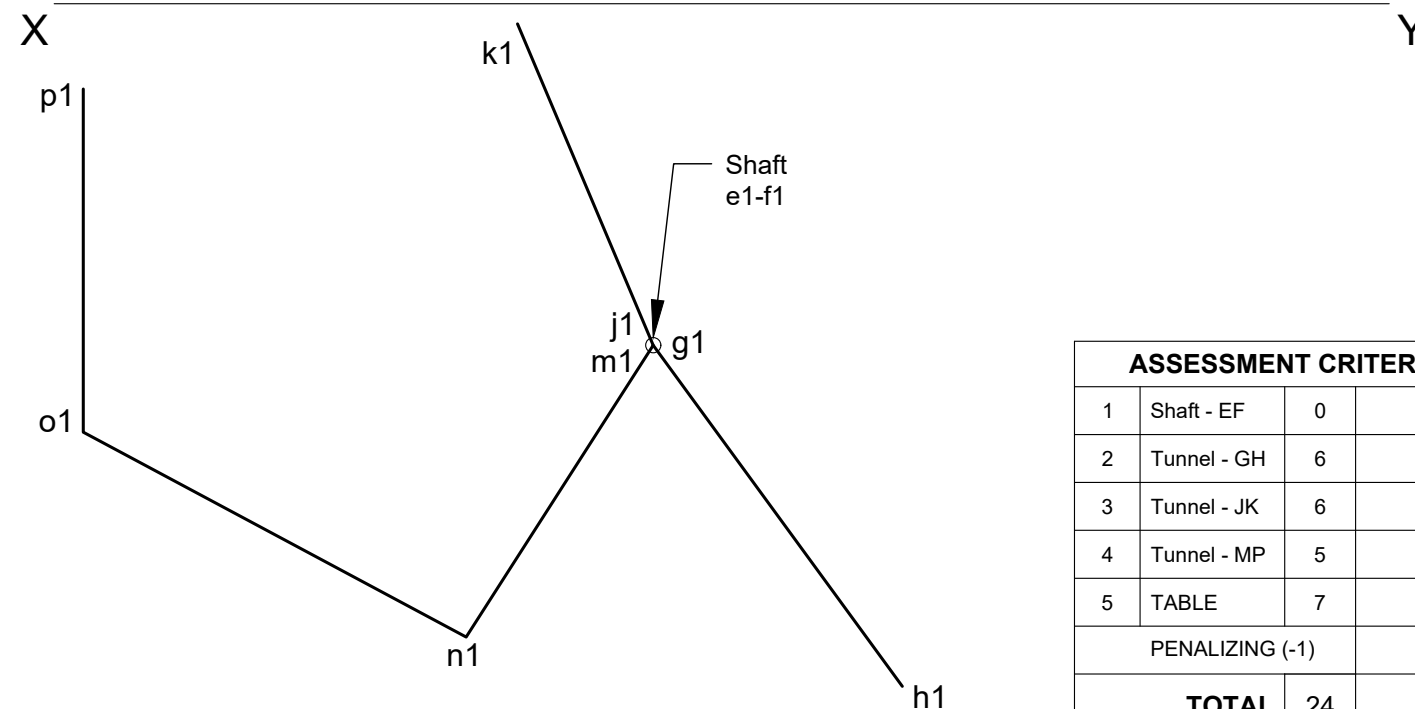
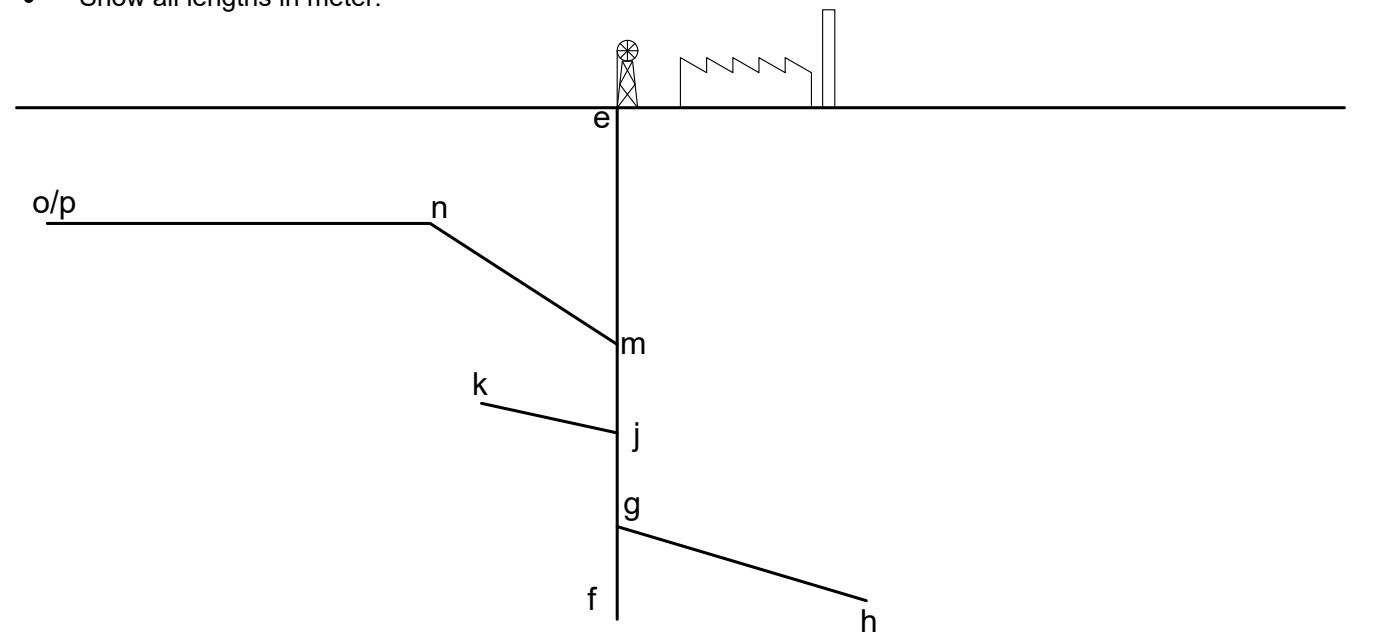


TABLE	
TL - EF	
$\ominus$ - EF	
TL - GH	
$\ominus$ - GH	
TL - JK	
$\ominus$ - JK	
TL - EFGH	

ASSESSMENT CRITERIA			
1	Shaft - EF	0	
2	Tunnel - GH	6	
3	Tunnel - JK	6	
4	Tunnel - MP	5	
5	TABLE	7	
PENALIZING (-1)			
<b>TOTAL</b>		<b>24</b>	



DESCRIPTIVE GEOMETRY	ESTIMATED TIME FOR COMPLETION	30 MIN	GRADE	NAME & SURNAME	TASK	PAGE
	YOUR TIME OF COMPLETION	MIN	10		9.5	3.5