Entry Level Literacy and Numeracy Assessment for the Electrotechnology Trades

Enrichment Resource

UNIT 11: Interpreting Plans
INTERPRETING PLANS

Interpreting plans is an important part of the electrical trade. Floor plans are often used to show the location of electrical installations. It is important that information is correctly understood to enable the planning, construction and alteration of electrical installations.

LEARNING OUTCOME

• Can accurately read and understand simple floor plans

PERFORMANCE CRITERIA

• Calculates distances using known dimensions
• Calculates direction of north to determine orientation
• Uses principle of Scale to convert dimensions
CALCULATING DIMENSIONS

The understanding of plans is necessary to establish the exact positions of electrical installations.

Positions of electrical installations are dictated by room dimensions, the location of appliances and the SAA wiring rules.

Positions are determined by allowing for, the dimensions of appliances and fittings.

Example 1

Bathroom Floor Plan

Dimensions:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Room Length</td>
<td>6.2 metres (6200 cm)</td>
</tr>
<tr>
<td>Shower base</td>
<td>90 cm</td>
</tr>
<tr>
<td>Wash basin unit</td>
<td>90 cm</td>
</tr>
<tr>
<td>Distance of wash basin</td>
<td></td>
</tr>
<tr>
<td>unit from western wall</td>
<td>x cm</td>
</tr>
</tbody>
</table>

\[
x = 620 - (90 + 90) = 440 \text{ cm}
\]

Answer: The wash basin unit is 5m from the western wall.
SCALE

Most plans are drawn to a scale.

For ease of representation, large dimensions are converted to smaller metric units.

The principle of ratio is used to indicate the scale (Refer to the Ratio Unit 8)

For example. 1 : 1 000 000

1 : 1 000

1 : 50

This ratio indicates the relation between distances on the plan with distances in reality. So;

- ‘1 : 100’ means that 1 cm is equivalent to 100 cm (1 metre).
- ‘1 : 1 million’ means that 1 cm is equivalent to 10 kilometres.
ORIENTATION

Plans often show the direction of North to assist with orientation.

Example 2  The GPO in the Lounge Room is located on the southern wall.

Example 3  The Dining Room is east of the kitchen.
READING FLOORPLANS

EXERCISE 1

Floor Plan
16.00

Bedroom 1
Laundry
Kitchen
Dining Room
Lounge Room
Hallway
Front Entry
Bathroom
Garage
Bedroom 2
Bedroom 3

1.00
3.00
5.00
2.50
8.00
1.50

Symbol for Socket Outlet
Dimensions in Metres

a. How many GPO’s are located on the western kitchen wall?

b. State the position of the following rooms in relation to the kitchen.

i. The Laundry
ii. The Bathroom

........................................................................................................................................

iii. The Dining Room

........................................................................................................................................

c. Find the following.

i. The length of the southern wall of Bedroom 2 and Bedroom 3 combined.

ii. The length of the northern wall of the Dining Room.

iii. The length of the southern Kitchen wall.

iv. The length of the northern wall of the Laundry and Bedroom 1 combined.

☑️ Use the answer sheet to check your work.
ANSWERS:

EXERCISE 1

a. 2 GPO’s are on the western Kitchen wall.

b.  
i. The Laundry is next to and west of the Kitchen.

    ii. The Bathroom is south west of the Kitchen on the western exterior wall.

    iii. The Dining Room is next to and east of the Kitchen.

c.  
i. Bedroom 2 + Bedroom 3 = 16m - (1m + 3m + 5m)

    = 16m - 9m

    = 7m

    ii. Northern wall of the Dining Room = 5m

    iii. The southern Kitchen wall = 3m

    iv. Bedroom 1 + Laundry = 16m - 9m

    = 7m