

1301/312
1304/312
1305/312
TECHNICAL DRAWING
June/July 2009
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL
CARPENTRY AND JOINERY CRAFT CERTIFICATE
MASONRY CRAFT CERTIFICATE
PLUMBING CRAFT CERTIFICATE

TECHNICAL DRAWING

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

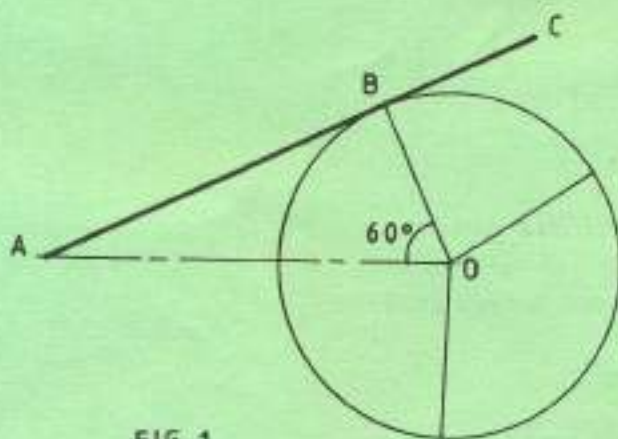
*Drawing paper size A2
Drawing instruments
Metric scale rule.*

*Answer any FIVE of the following EIGHT questions.
All questions carry equal marks.
Maximum marks for each part of a question are as shown.
All dimensions are in millimetres.*

This paper consists of 9 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.

1. (a) State clearly the proper use of the following instruments:
 - (i) Tee square
 - (ii) Set square. (2 marks)
 - (b) Construct a diagonal reduction scale of 1:100 to read upto 14 metres to an accuracy of 0.05 metres. Indicate the following readings on the scale:
 - (i) 8.25 m
 - (ii) 6.55 m (10 marks)
 - (c) Using the concentric circles method, construct an ellipse with major axis of 80 mm and a minor axis of 60 mm. (8 marks)
2. (a) Figure 1 shows a reciprocating water pump system. Draw the locus of point "C" when the crank BO makes one revolution given that B is pin jointed to AC and A is allowed to move horizontally. (10 marks)

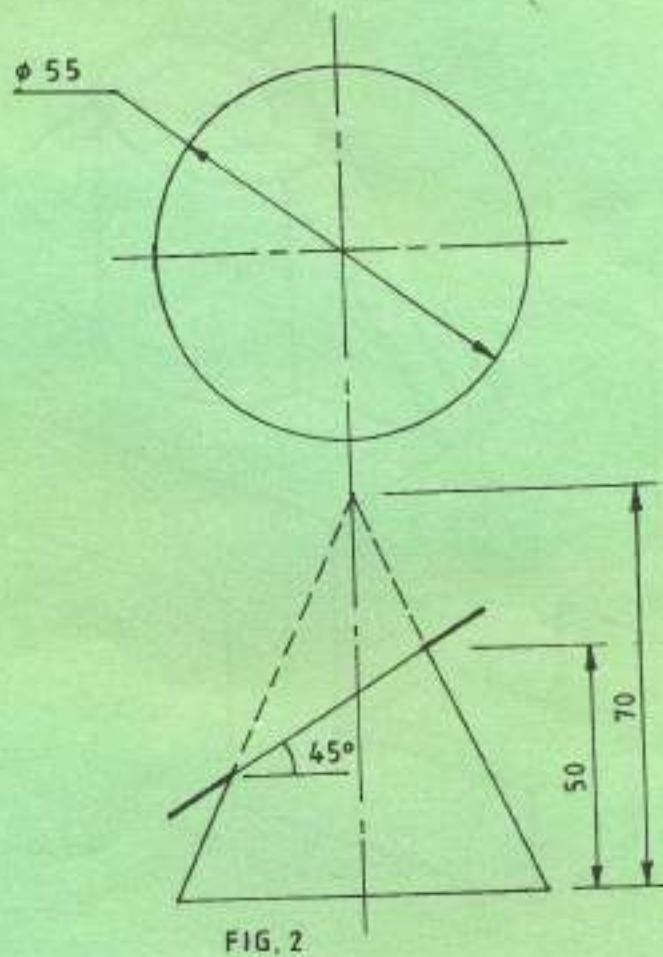


OB = 25 mm
 AB = 55 mm
 BC = 30 mm

FIG. 1

- (b) Figure 2 shows the front elevation and plan of a truncated right cone. Copy the given views and draw full size the following:

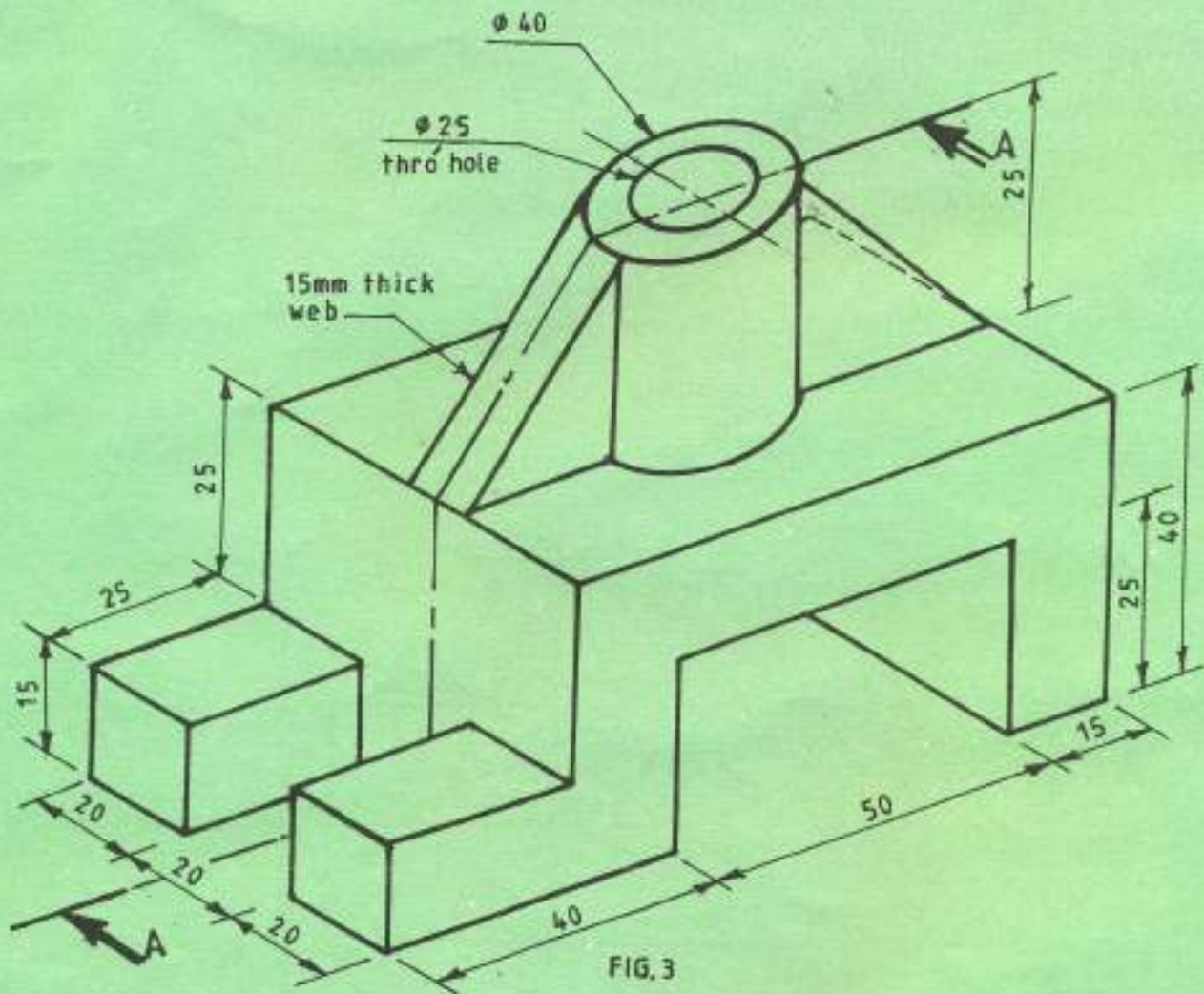
- (i) truncated plan;
- (ii) the left end elevation;
- (iii) true shape of the truncated face. (10 marks)



3. Figure 3 shows an isometric view of a shaped block. Draw full size the following views in first angle projection:

- (i) sectional elevation "A-A";
- (ii) plan;
- (iii) left end elevation.

(20 marks)



4. Figure 4 shows a security light reflector consisting of elliptical and parabolic curves. Construct the reflector using a scale of 1:1. (20 marks)

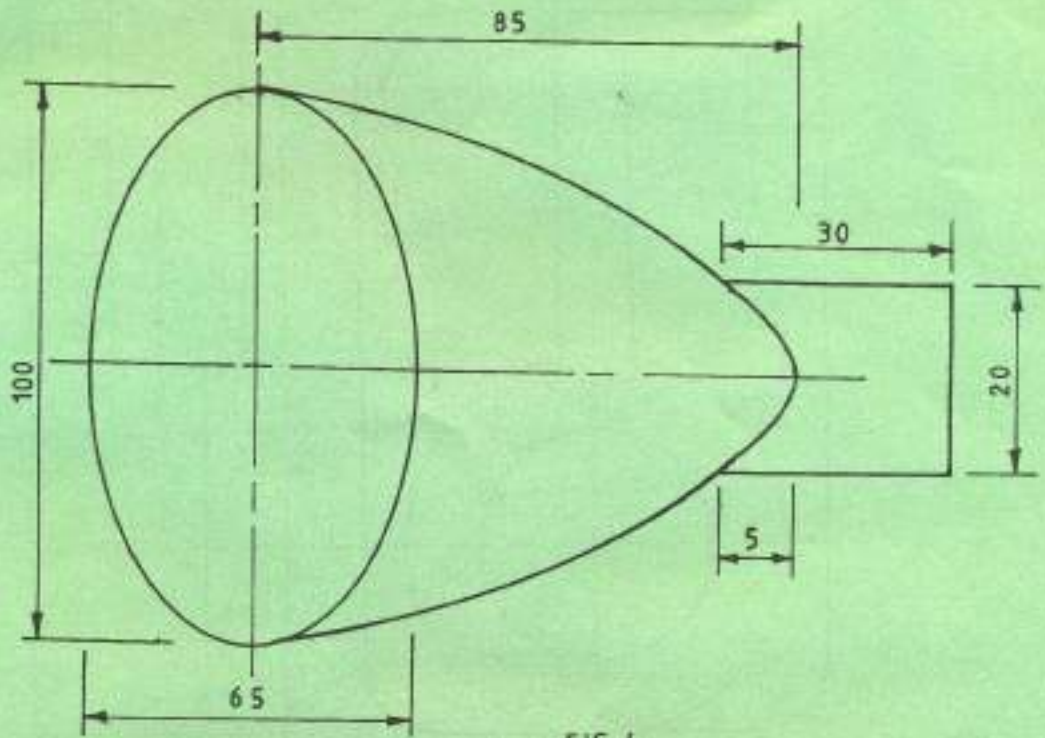
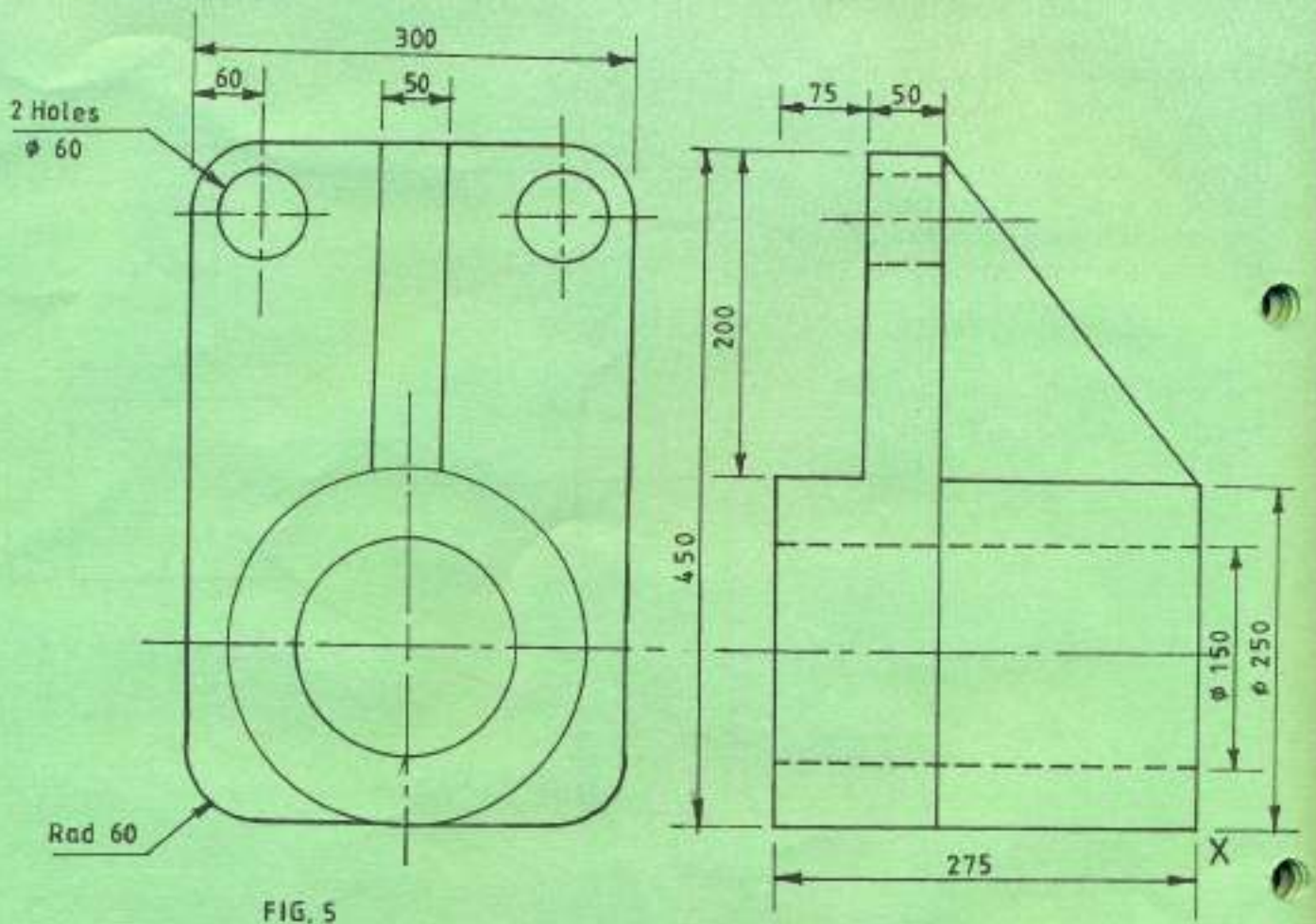


FIG. 4

5. Figure 5 shows two views of a bracket. Using a scale of 1:5 draw the oblique view of the bracket making 'X' the lowest point. (20 marks)



6. Figure 6 shows three interpenetrating pipes. Construct the curves of interpenetration between the intersecting pipes. (20 marks)

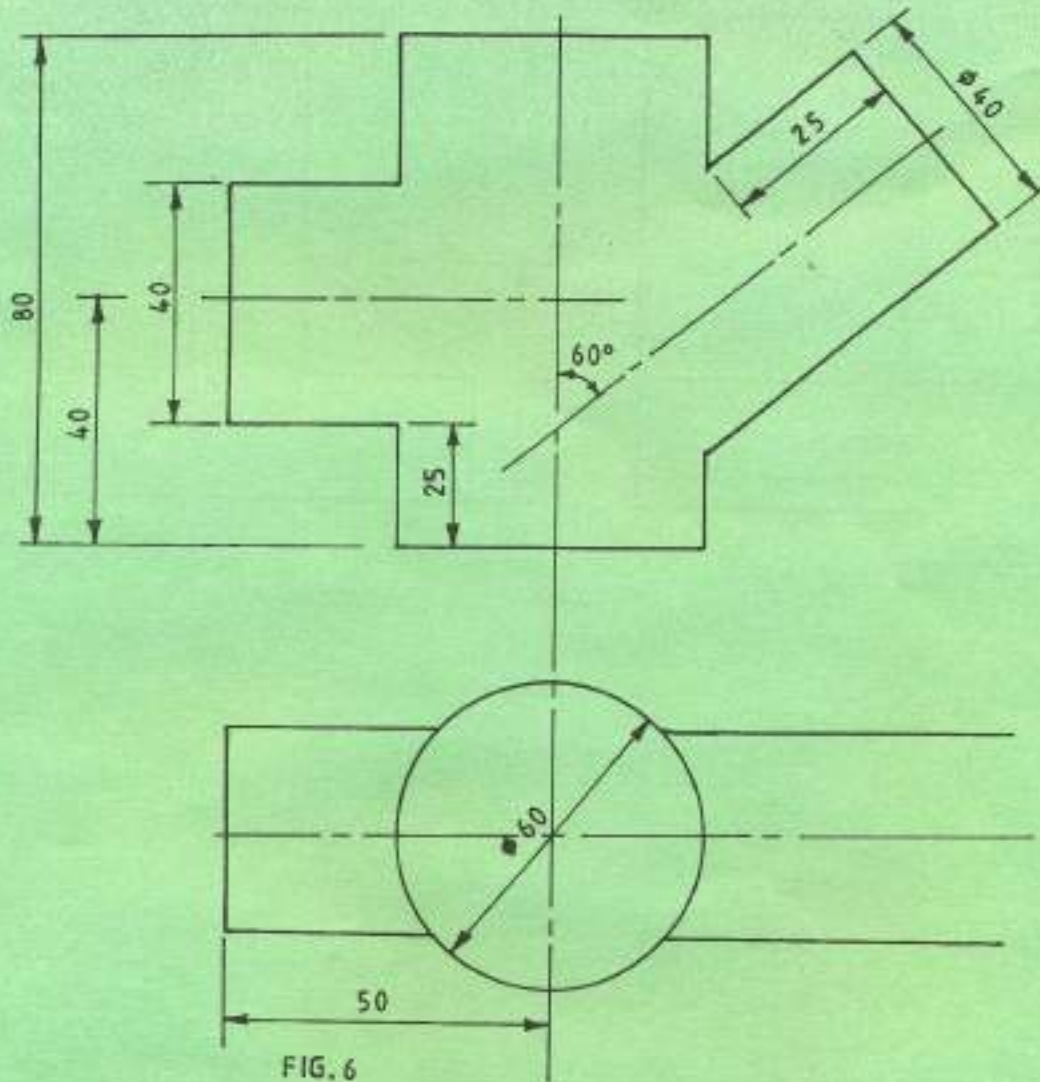
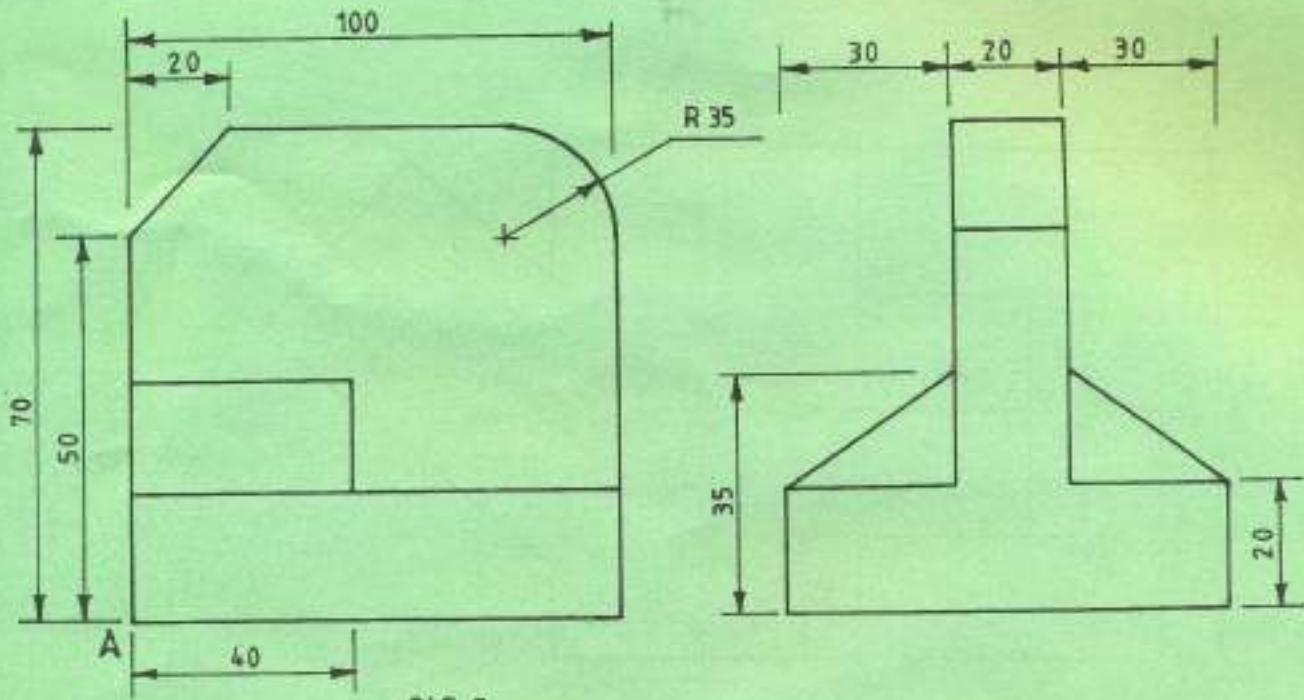


FIG. 6

7. Figure 7 shows two views of a block. Make full size isometric drawing of the block taking corner "A" as the lowest point. (20 marks)



8. Figure 8 shows the floor plan of a proposed school canteen which is to have a pitched roof. Using a scale of 1:20 draw section "A-A" from the foundation to the roof given the following specifications:

SPECIFICATION

SIZE

Strip concrete foundation	600 x 200 mm
Foundation wall	225 mm thick
Oversite concrete	100 mm thick
Hardcore	200 mm thick
Superstructural wall	150 mm thick
Window "B"	1000 x 1000 mm
Lintel	150 x 225 mm high
Floor to ceiling height	2600 mm
Wall plate	100 x 50 mm
Rafters	100 x 50 mm
Ceiling joists	50 x 50 mm
Fascia board	150 x 50 mm
Purlins	75 x 50 mm
G.C.I sheets	30 gauge

(20 marks)

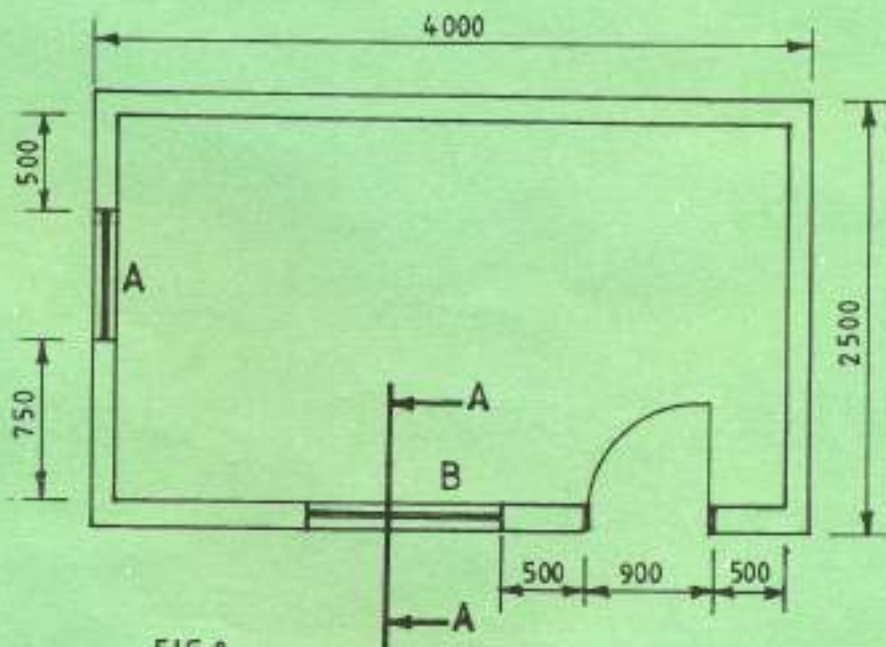


FIG. 8