

Q-1 Construct a scale of  $1\text{cm} = 1\text{m}$  to read meter and decimeter and long enough to measure upto  $14\text{m}$ . Show on the scale a distance  $12.4\text{m}$

Q-2 The distance b/w the Ludhiana & Ambala railway station is  $120\text{ km}$ . A passenger covers the distance in  $4\text{ hrs}$ . Construct a plane scale to measure time upto single minute the RF of scale is  $\frac{1}{200000}$  indicate on the scale dis. covered by the train in  $38\text{ min}$

Q-3 Construct a diagonal scale of  $1:50$  to show m, cm, dm and long enough to measure upto  $6\text{m}$

also indicate on this scale a distance of  $4\text{m}$ ,  $5\text{dm}$  and  $4\text{cm}$

Q-4 The distance b/w Ludhiana and Chandigarh is  $100\text{ km}$  and it is represented on a certain map by a line  $2.5\text{ cm}$  long. Find the RF.

of the scale draw a diagonal scale showing

single km and long enough to measure upto

$600\text{ km}$ . Indicate a distance of  $573\text{ km}$

on this scale.

Q-5 Construct a forward vernier scale of

$RF = \frac{1}{2500}$  and long enough to measure

$300\text{ m}$  and to show m. Show on this

scale a distance of  $157\text{ m}$ .

Q-6 Construct a backward vernier scale

when  $1.5\text{ cm}$  on scale represent  $1.2\text{ m}$

actual length to read upto  $16\text{ m}$

also show on this scale a distance of

$12.65\text{ m}$  and  $8.37\text{ m}$

A-1

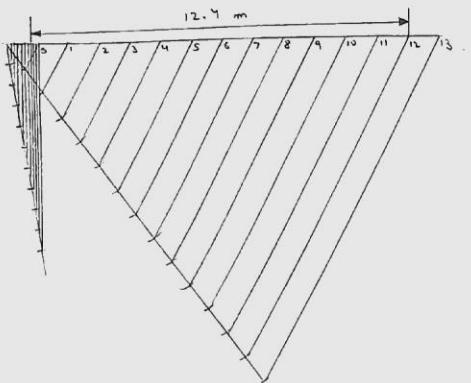
$$1 \text{ cm} = 1 \text{ m}$$

$$1 \text{ cm} = 100 \text{ cm}$$

$$RF = \frac{1}{100}$$

$$\text{Max distance} = 14 \text{ m}$$

$$LOS = \frac{1}{100} \times 14 \times 100 = 14 \text{ cm}$$

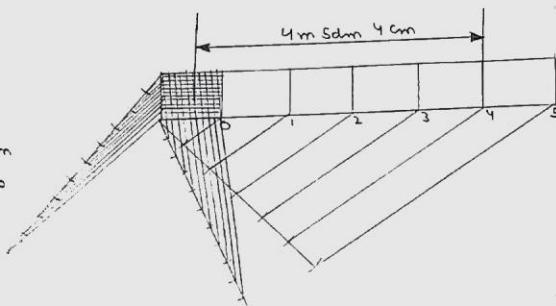


A-3

$$RF = \frac{1}{50}$$

$$\text{Max Length} = 6 \text{ m}$$

$$LOS = \frac{1}{50} \times 6 \times 100 = 12 \text{ cm}$$

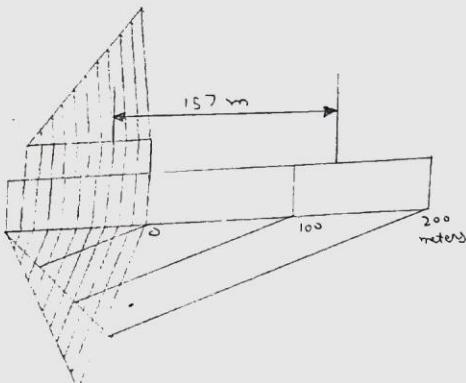


A-5

$$RF = \frac{1}{2500}$$

$$\text{Max Length} = 20 \text{ m}$$

$$LOS = \frac{1}{2500} \times 20 \times 100 = 12 \text{ cm}$$



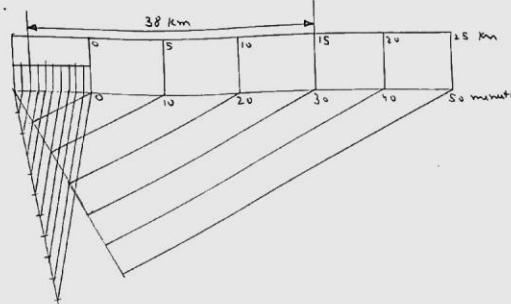
A-2

$$RF = \frac{1}{200000}$$

$$4 \text{ km} = 120 \text{ Km}$$

$$1 \text{ km} = 30 \text{ Km}$$

$$38 \text{ min} = 19 \text{ Km}$$



$$LOS = \frac{100 \times 30 \times 100}{200000}$$

$$= 15 \text{ cm}$$

A-4

$$100 \text{ km} = 2.5 \text{ cm}$$

$$100 \times 1000 \times 100 = 2.5$$

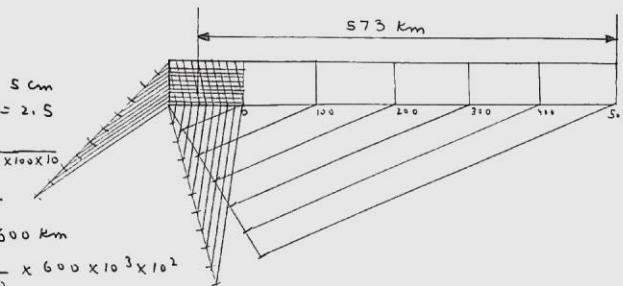
$$RF = \frac{2.5}{100 \times 1000 \times 100 \times 10}$$

$$= \frac{1}{4000000}$$

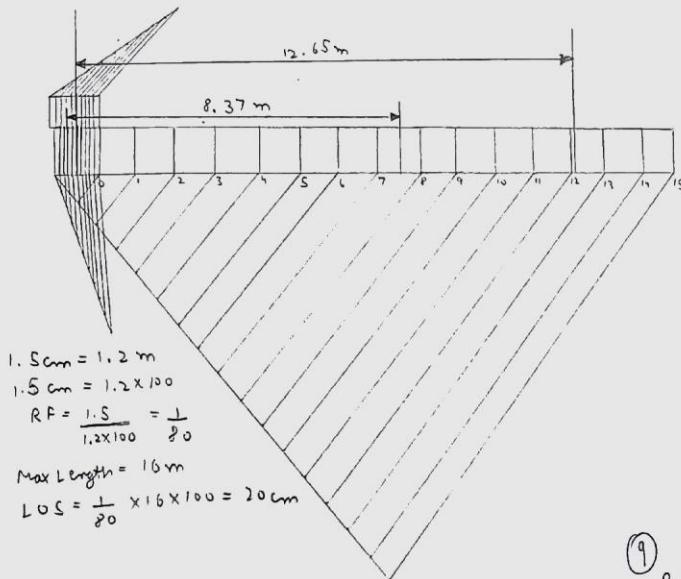
$$\text{Max Length} = 600 \text{ km}$$

$$LOS = \frac{1}{4000000} \times 600 \times 10^3 \times 10^2$$

$$= 15 \text{ cm}$$



A-6



$$1.5 \text{ cm} = 1.2 \text{ m}$$

$$1.5 \text{ cm} = 1.2 \times 100$$

$$RF = \frac{1.5}{1.2 \times 100} = \frac{1}{80}$$

$$\text{Max Length} = 16 \text{ m}$$

$$LOS = \frac{1}{80} \times 16 \times 100 = 20 \text{ cm}$$

(9)  
Rah

- Q-1 Draw the projection of following pt. On a common x-y line keep the dis. b/w two consecutive projectors as 20mm
- i) A, 30mm above HP & 20mm in front of VP
  - ii) B, 80mm above HP & 40mm behind VP
  - iii) C, 30mm below HP & 40mm in behind of VP
  - iv) D, 30mm below HP & 40mm in front of VP
  - v) E, In the HP & 40mm behind the VP
  - vi) F, In the VP & 40mm below HP
  - vii) G, In the both HP & VP

Q-2 Point A is 20mm above HP & 30mm in front of VP and point B is 25mm below HP and 40mm behind VP. The end projectors for these points are 40mm apart. Draw the projectors of the points and find the length of front view and the top view of the line joining A & B

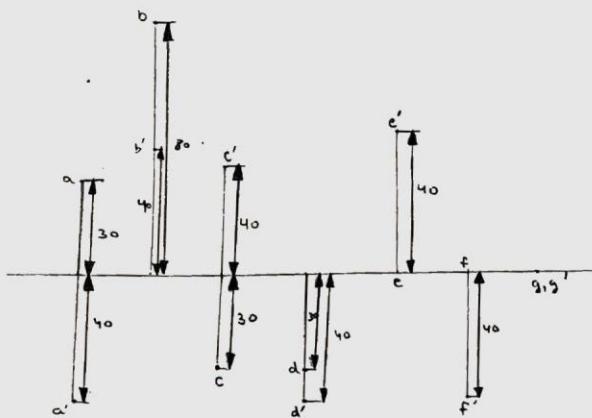
Q-3 A point C is 15mm above HP and 45mm in front of VP. In what quadrant another point D lies if dis b/w vertical projectors of C & D is equal to 60mm and the dis. b/w projectors through C & D be 40mm and point D is 40mm in front of VP?

Q-4 A point A is 25mm above HP and is in 1st quad. Its shortest dis from x-y line is 50mm. Draw its plan & elevation.

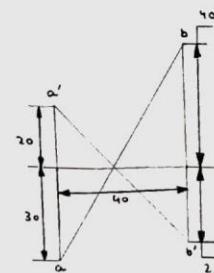
Q-5 A point P is 30mm above HP and 25mm in front of VP. Determine the least distance from the X-Y line

Q-6 A point P is 25mm below the HP and its shortest distance from x-y line is 50mm. The point P lies in third quadrant. Draw its projections.

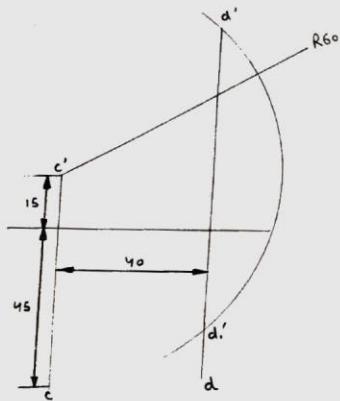
A-1



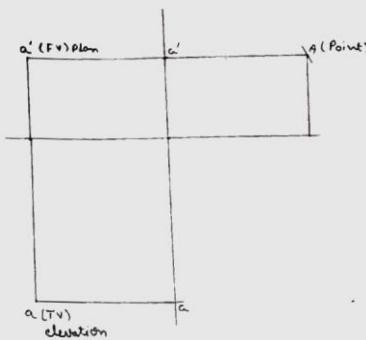
A-2



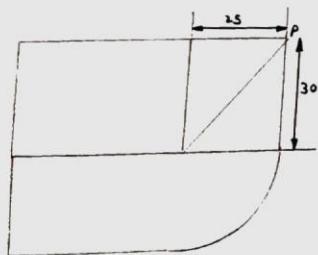
A-3



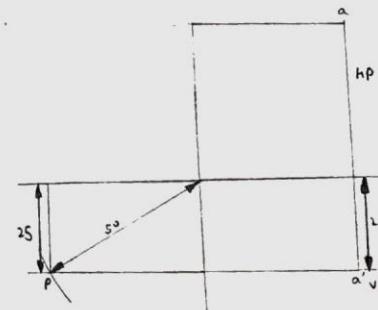
A-4



A-5



A-6



Q-1 (Line is  $\perp$  to both HP & VP)

A line AB 50 mm long has its end A 30 mm away from HP & 20 mm away from the VP. The line is  $\perp$  to both HP & VP. Draw its projection in all the 4 quadrants.

Q-2. (Line  $\perp$  to VP &  $\perp$  to HP)

A line AB is 15 mm away from HP & 10 mm away from VP. Draw the projection in all the 4 quad. assume that whole of line lies in same quad. Line AB is of 40 mm long.

Q-3 (Line  $\perp$  to VP &  $\perp$  to HP)

A line is 40 mm  $\perp$  to VP & its end A is 15 mm away from the HP & 10 mm away from VP. Draw its projection in all the 4 quad. Assume that whole of the line lies in same quad.

Q-4 (Line inclined to HP and parallel to VP)

A line AB is 50 mm long has its end A is 25 mm away from the HP and 15 mm away from VP. The line is inclined to HP at  $30^\circ$  and  $\parallel$  to VP. Draw the projection in all the 4 quad. Assume that whole of line lies in same quad. Also locate its traces.

Q-5 (Line inclined to VP and parallel to HP)

A line AB 50 mm long has its end B 30 mm away from HP and 20 mm away from VP. The line is  $\perp$  to HP and is inclined at  $30^\circ$  to VP. Draw its projections in all 4 quad. when the whole line lies in same quad. Also locate its traces.

6. A line AB measures 40 mm. Line is  $\perp$  to P and incline to HP at  $30^\circ$  and its end A is 10 mm low HP and 20 mm behind VP. Draw true length sum the line to be in all the quad.

A line  
from  
to both  
quadrants

Q-2. LL  
A line from  
assume AB is

Q-3. CL  
A line from  
Point C of the

Q-4. LC  
A line away  
line the P  
line

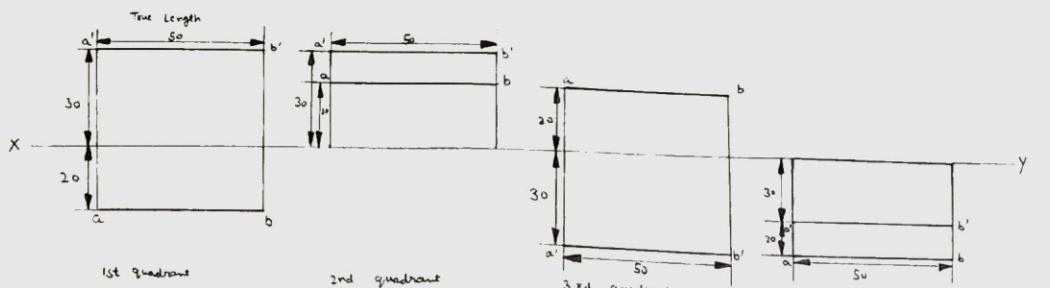
Q-5. AL  
A line from  
to in  
quadrant

Q-6. VL  
A line from  
to A

Q-7. RL  
A line from  
to R

(09) Rad

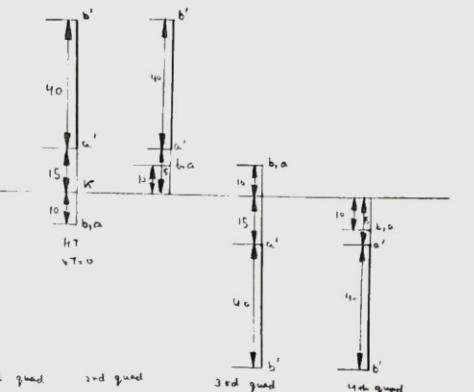
A-1



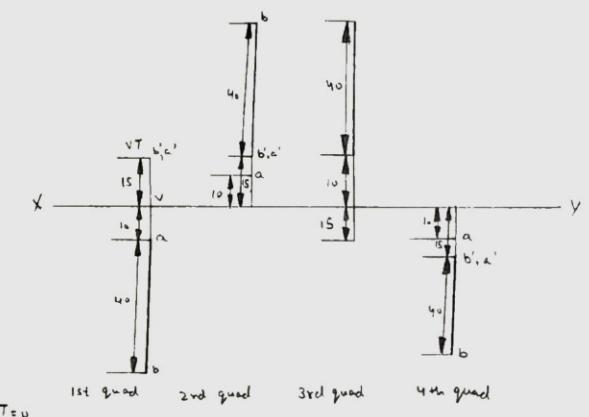
$$HT = 0$$

$$VT = 0$$

A-2

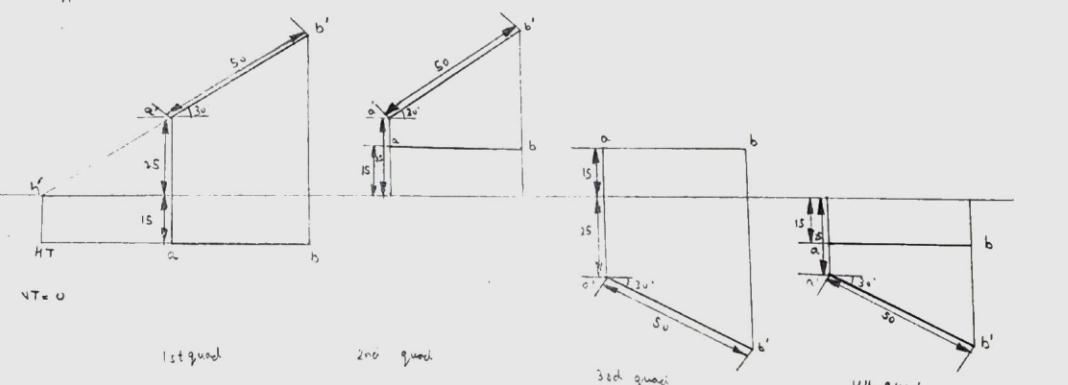


A-3



$$HT = 0$$

A-4



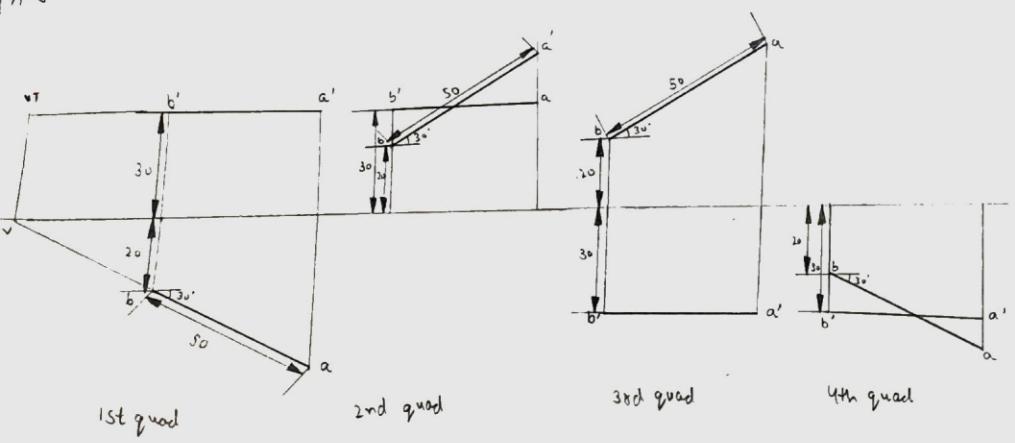
1st quad.

2nd quad.

3rd quad.

4th quad.

A-5



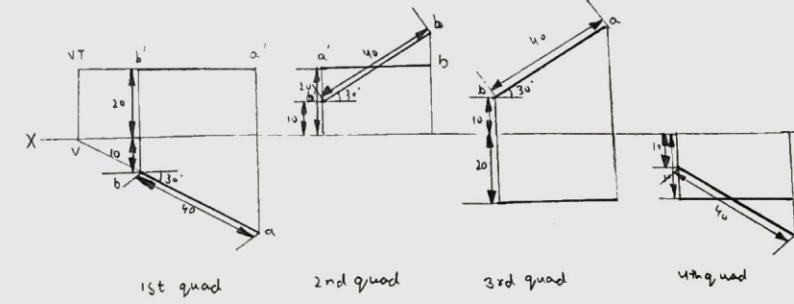
1st quad.

2nd quad.

3rd quad.

4th quad.

A-6



1st quad.

2nd quad.

3rd quad.

4th quad.

Line inclined to both HP & VP

Q-1 A line AB has its end A 7mm behind V below HP and the end B 38mm behind VP & 49mm below HP. The dis. b/w end projection is 37mm. Draw its projection & its traces.

Q-2 A line AB 60mm long has its end A 15mm behind VP & 10mm below HP it is inclined at 45° to the HP & 30° to the VP. Draw its projection when B lies in 3rd quad.

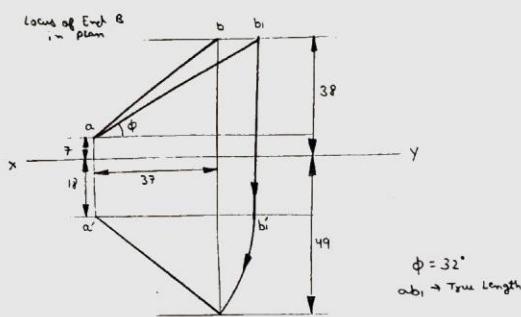
Q-3 A line AB 65mm long has its end A both in HP & VP. It is inclined at 45° to the HP & 30° to VP. Draw its projection when line is in 1st quad.

Q-4. Plan & elevation of line AB 60mm measures 54mm and 45mm resp. and A is 15m from HP and 10mm from VP draw its projection and determine its inclination to reference planes when line lies in 3rd quad.

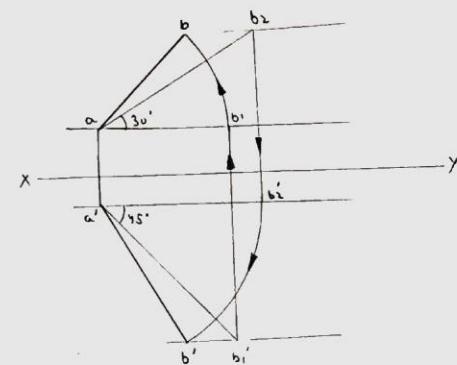
Q-5. A line AB inclined at 30° to VP has its end A 15mm and end B 50mm below HP. The length of the elevation is 60mm and its VT is 7mm below HP. Draw its projection and determine the true length AB & its inclination with HP and VT

Q-6 A line AB 70mm long is inclined at 45° to HP and 30° to VP its mid point P is 30mm below HP & 25mm behind VP. Draw its projections on the line.

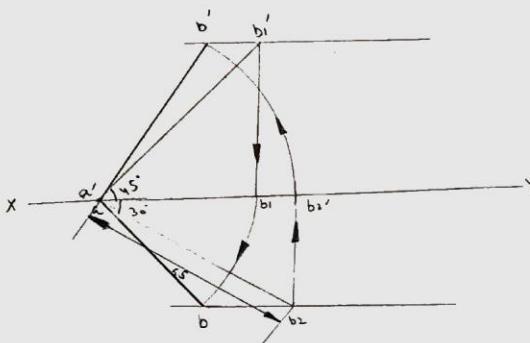
A-1



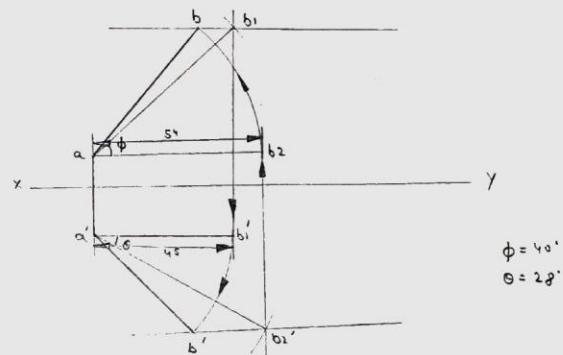
A-2



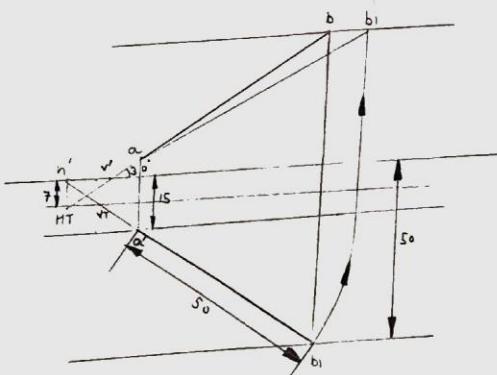
A-3



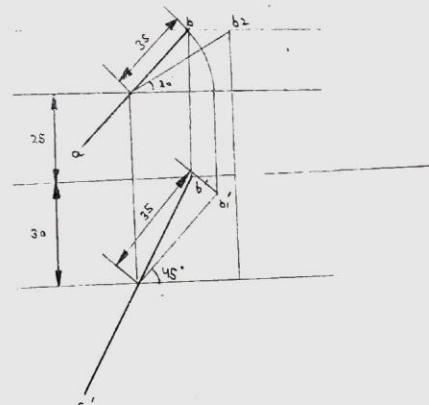
A-4



A-5



A-6



Q-1 A sq. lamina (thin layer of composite <sup>structw</sup>) of 25 mm sides is  $\parallel$  to HP and its 10 m from it. Its edge nearest to the VP is 10 mm from VP. Draw its projection and locate its traces using 3<sup>rd</sup> angle projection.

Q-2 A regular hexagon lamina of 25 mm side rest on one side on HP it is  $\parallel$  to & 11mm away from VP and it is in 1<sup>st</sup> quad. Draw its projection.

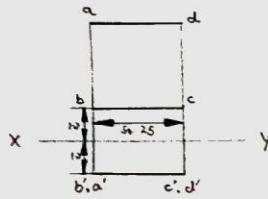
Q-3 A regular pentagon ABCDE 20 mm side units as its corners A in HP & sides CD is  $\parallel$  to HP. Draw its projection when its plane  $\parallel$  to & 10 mm away from VP (1<sup>st</sup> quad)

Q-4 A sq. lamina ABCD of 30 mm side is  $\perp$  to VP & inclined to HP at 45° it rest on one of its side in HP. Draw its projection & position of traces the corner point C is 12 mm in front of VP

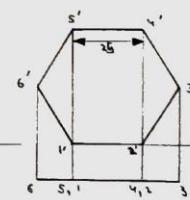
Q-5 A regular pentagon ABCDE of 25 mm side has its side BC in HP its plane is  $\perp$  to HP & inclined at 45° to the VP. Draw its projections show its traces when its corners nearest to VP is 10 mm from it.

Q-6 Draw the projection & traces of a thin circular sheet off  $\phi$  50 mm and negligible thickness when its plane is  $\perp$  to VP &  $\parallel$  to HP. A point on its circumference & nearest to the VP is 40 mm away from the HP & 14 mm away from the VP

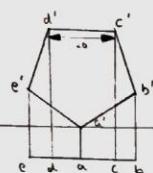
Q-7 A regular pentagonal lamina of 25 mm side rest on HP on one of its side such that it is inclined to HP at 30° & side on which it rest inclined at 45° to the VP. Draw its projection in 1<sup>st</sup> angle.



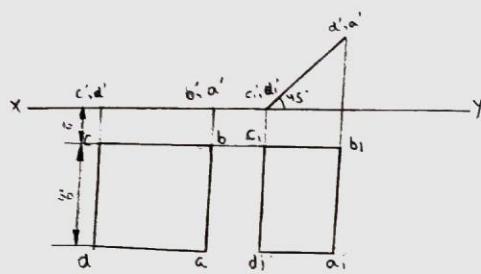
A-2



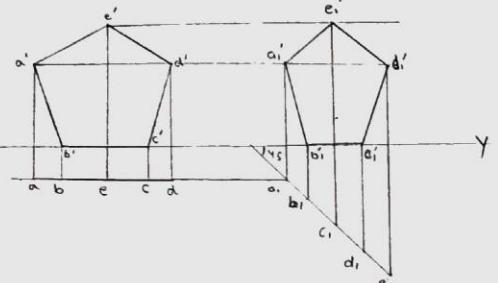
A-3



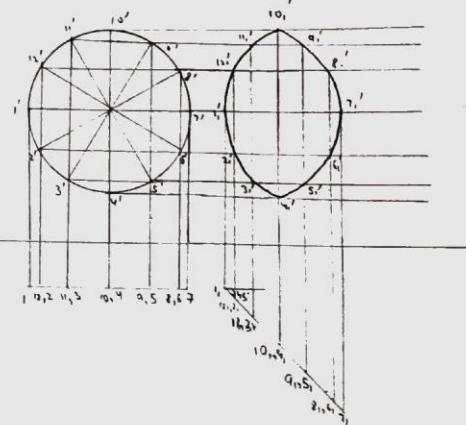
A-4



A-5



A-6



A-7

