A square plane ABCD of sides 60 mm has its surface parallel to & 30 mm above HP and 20 mm in front of VP. Draw its projections if

1. One side is parallel to VP
2. One side is inclined at 30\* to VP
3. All sides are equally inclined to VP

Step 1

Set the screen in mm with 420,297 as upper right corner measurement. Zoom -Auto should be ON along with ORTHO and OSNAP.

Step 2

Set the Dimensioning style.

Choose Dimstyle, go to Modify and click. Choose Symbol and Arrow. Because we are in mm, increase the Arrow size to 7. Go to Text and change the Text height to 10 and 7, Text Placement in Vertical as above, Off set from dim line to 3.0, and then Text alignment as Aligned with dimension line (in line with IS specification).

Step 3

Use Line command to draw XY line.

Draw a line to measure 20mm below the XY line to point a distance of 20mm from the VP. Draw a square of 60 mm size with the top line parallel to XY line. This is the Top view of the square, which is parallel to HP and perpendicular to VP.

Step 4

Identify the top view of the square as abcd.

Step 5

Draw projector lines to get the Front view of abcd as a line at 30 mm above HP, i.e. above XY line. Identify the Front view as d’(a’) and c’(b’). a’ and b’ are invisible, behind d’ and c’ in the same orthogonal line and are shown in (…) in the Front view.

Step 6

Put dimensions

Step 7

For the 2nd problem, draw the square as in 1st problem and then use Rotate command. Use a as base point. Because the distance of the square from the VP is 20mm, use (-) 30\* to rotate the square in the clockwise direction (AutocAD by default considers anticlockwise direction to measure angle as is done in geometry).

Step 8

Use projector lines to draw the Front view.

Step 9

Put dimensions

Step 10

For the 3rd problem, draw the square as in 1st problem. To provide all sides are equally inclined to VP, make the angle as 45\* and draw the balance same as in 2nd problem.