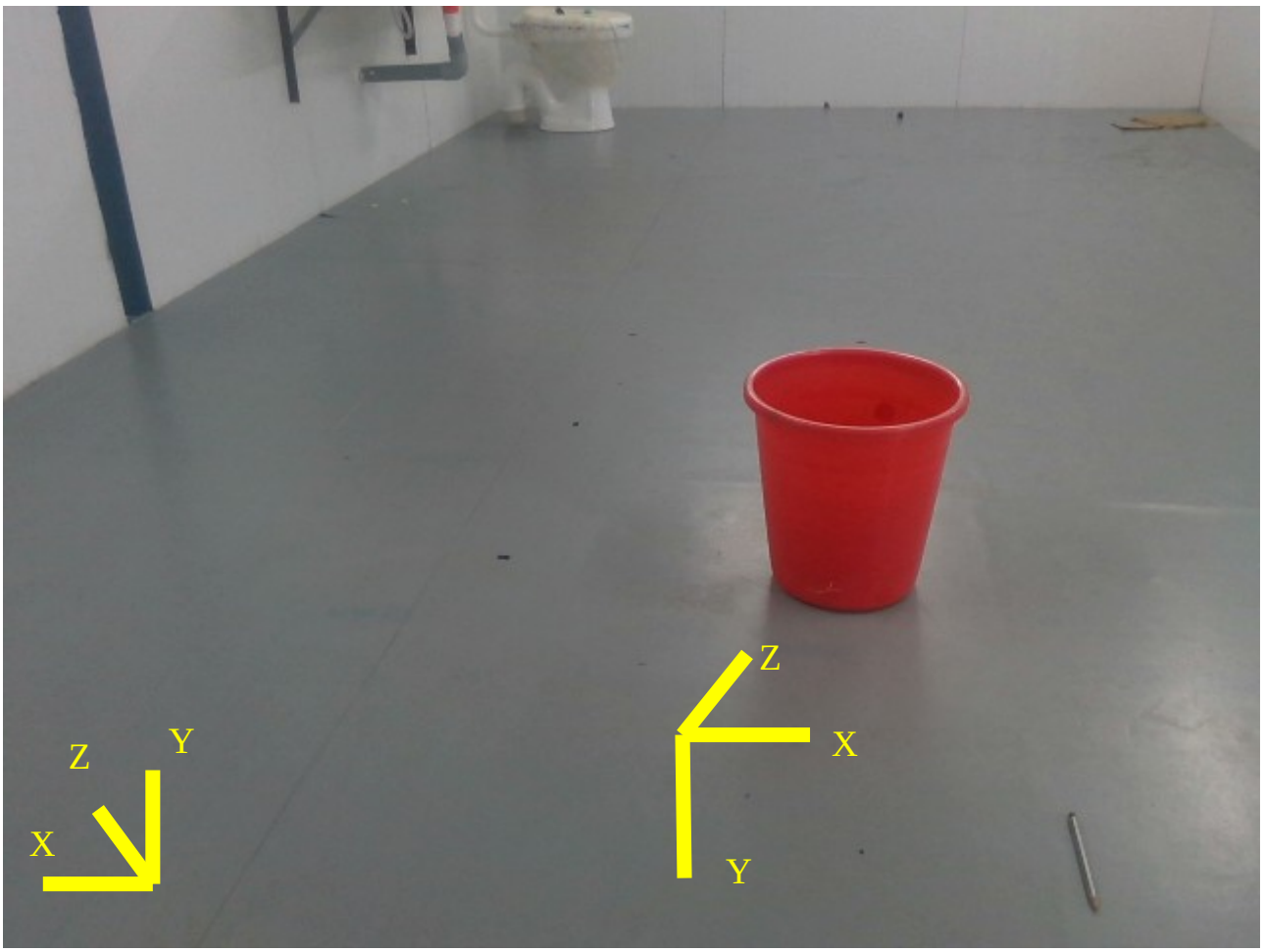

Through Homography x and z co ordinate of the bottom point of the dustbin is obtained.

X co ordinate of centre of dustbin is the same
Z co ordinate = z + 9.5 cm (Radius of the bottom of dustbin)

Translation Matrix = $$\begin{bmatrix} 1 & 0 & 0 & tx \\ 0 & 1 & 0 & ty \\ 0 & 0 & 1 & tz \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

t_x = 250 cm
t_y = 0 cm (Note height of dustbin = 40 cm)
t_z = 250 cm

After translation it is roated around Z axis by 180 degree

Rotation Matrix = $$\begin{bmatrix} cos(180) & -sin(180) & 0 \\ sin(180) & cos(180) & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Results obtained

Actual Co-ordinates	Through Homography
(-200 , 40 , 300)	(-199.2 , 40 , 301.2)
(-250 , 40 , 300)	(-250.2 , 40 , 301.7)
(-300 , 40 , 300)	(-299.1 , 40 , 300.8)
(-200 , 40 , 350)	(-201.1 , 40 , 350.6)
(-250 , 40 , 350)	(-251.9 , 40 , 351.4)
(-300 , 40 , 350)	(-302.3 , 40 , 352.6)
(-200 , 40 , 400)	(-198.1 , 40 , 402.3)
(-250 , 40 , 400)	(-248.2 , 40 , 400.5)
(-300 , 40 , 400)	(-303.3 , 40 , 403.1)

Method 2 : Using the top black rim

To determine the rotation and translation matrix

Using Pnp