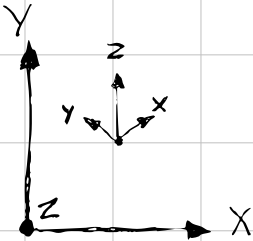


3D Projection

Front View
(screen Z)



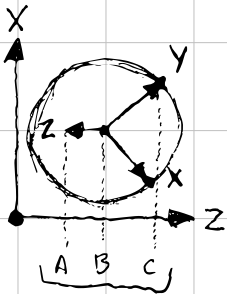
World Axis

In these examples 30° Tilted and 45° rotated

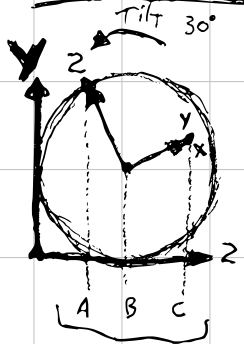
Screen Axis

Positive Z moves away from the screen

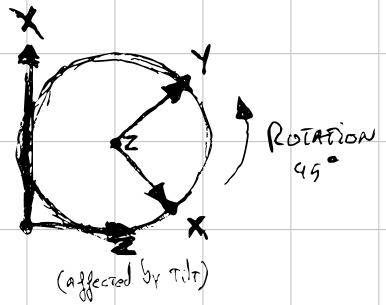
Top View
(screen Y)



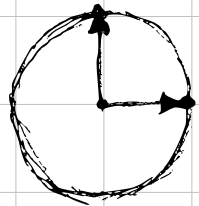
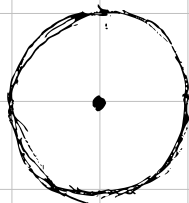
Side View
(screen X)

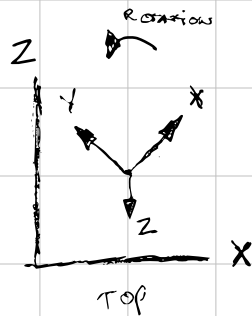
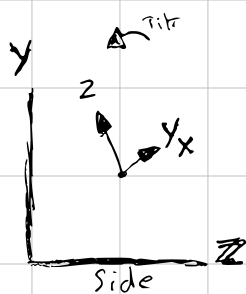
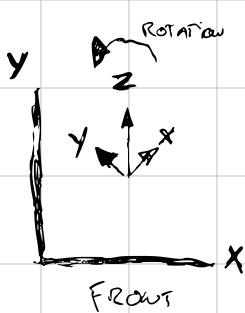


Top world view
(world Z)



Equal



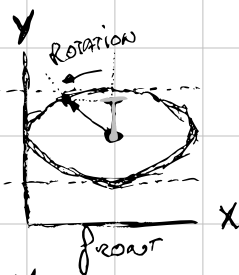
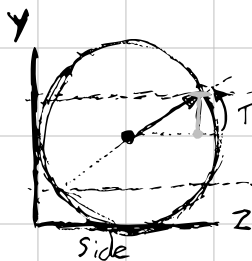


$$Z_y = \cos(\text{Tilt})$$

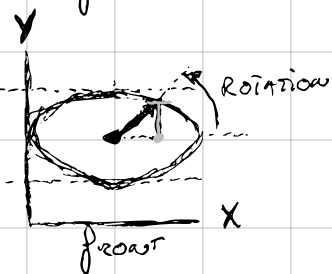
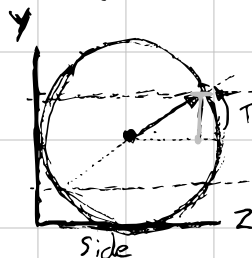


$Z_y = \text{World } \mathbf{z} \text{ contributions to Screen } \mathbf{y}$

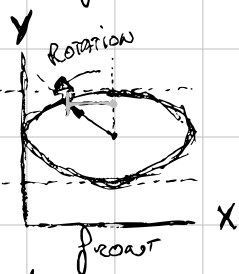
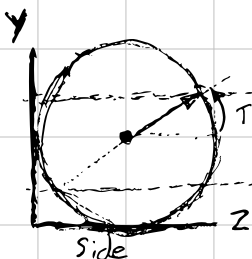
$$Y_y = \frac{\sin(\text{Tilt})}{\cos(\text{Rotation})} \times X$$



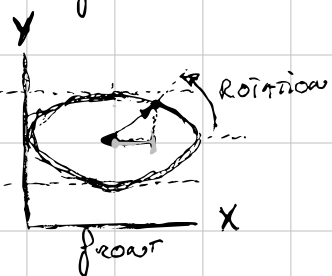
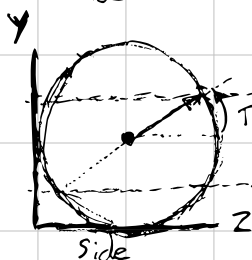
$$X_y = \frac{\sin(\text{Tilt})}{\sin(\text{Rotation})} \times X$$

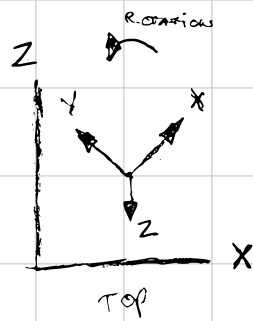
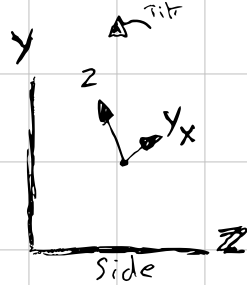
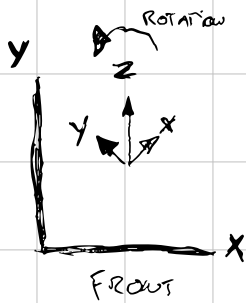


$$Y_x = \sin(\text{Rotation})$$

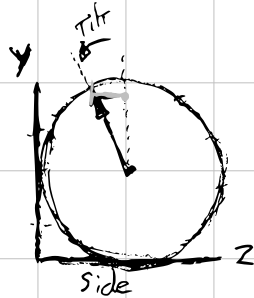


$$X_x = \cos(\text{Rotation})$$

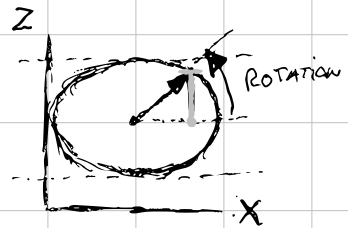
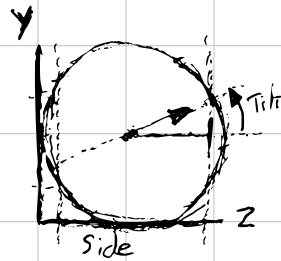




$$Z_z = -\sin(\text{Tilt})$$



$$X_z = \frac{\cos(\text{tilt})}{\sin(\text{ROTATION})} \cdot X$$



$$Y_z = \frac{\cos(\text{tilt})}{\cos(\text{ROTATION})} \cdot X$$

