

# CSE 410 - OFFLINE 1

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a. d  $\rightarrow$  direction angle (Z axis se milta hai)

rotation angle  $\rightarrow$  ମହାନ ଗିରନ ଉପରେ ମହାନ wheel  
 $\downarrow$   $\rightarrow$  ଗିରନର ଉପରେ  
 Y axis ଉପରେ ମହାନ

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Translate (x, y, z + wheel-radius)
glRotatef (direction-angle, 0, 0, 1)
glRotatef (rotation-angle, 0, 1, 0)
drawWheel()

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## draw wheel

Cylinder  $\rightarrow$  X axis  $\rightarrow$  Rotation ( $90^\circ$ )  $\rightarrow$  Rectangle (1)

Rect 2 (or)  $\leftarrow$  Rectangle (2)  
Y axis of  $90^\circ$   
rotation

a/d

direction angle  $\pm$  = wheel-step

w/s

w:

rotation\_angle  $\pm$  = wheelstep

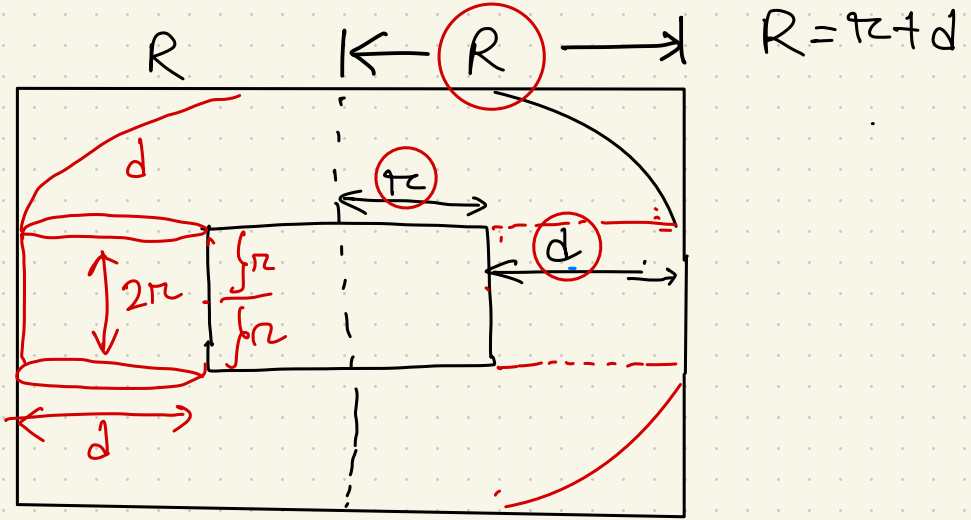
$$S = (\text{wheel Radius} * (\text{wheel step} * \pi)) / 180.0$$

$$\text{center.x} \pm = S * \cos(\text{direction angle} * \pi / 180.0)$$

$$\text{center.y} \pm = S * \sin(\text{direction angle} * \pi / 180.0)$$

$$\text{center.z} = 0$$

## Offline 1



Square  $\rightarrow \pi$  (જાદો ચક્રનો દિર્ઘ =  $2\pi$ )

Sphere  $\rightarrow d \leftarrow$  radius

Cylinder  $\rightarrow$  radius =  $d$   
height =  $2r$

Square

$$(0, 0, R)$$

$$2\pi R \text{ } \text{circ} = 2\pi$$

Cylinder

$$(r, r, 0)$$

$$\text{radius} = d$$

$$\text{height} = 2r$$

Sphere

$$(r, r, r)$$

$$\text{radius} = d$$