# ZER웅 <br> R@BOTICS <br> ISS PROGRAMING CHALLENGE 

## Rotation in 2-D

## Rotating Your Satellite in 2-D

- Let's say you want to rotate your satellite so that it points in a new direction
- You will learn to rotate your satellite, either 90 degrees or 180 degrees to change the direction it is pointing
- Using a model of a SPHERES, try rotating the model to change the direction the SPHERES is pointing by 180 degrees or 90 degrees as shown in the pictures below

90 degree rotation

180 degree rotation


## Rotating Your Satellite in 2-D (cont.)

- To rotate 180 degrees:
- Example
- The satellite is initially pointing in the negative $x$ direction
- Tell the satellite to point in the positive $x$ direction



## Rotating Your Satellite in 2-D (cont.)

- To rotate 90 degrees
- Change the pointing direction from the $x$ - axis to the $y$ axis
- Example:
- The satellite is initially pointing in the negative $x$ direction
- Tell the satellite to point in the positive $y$ direction

90 degree rotation


