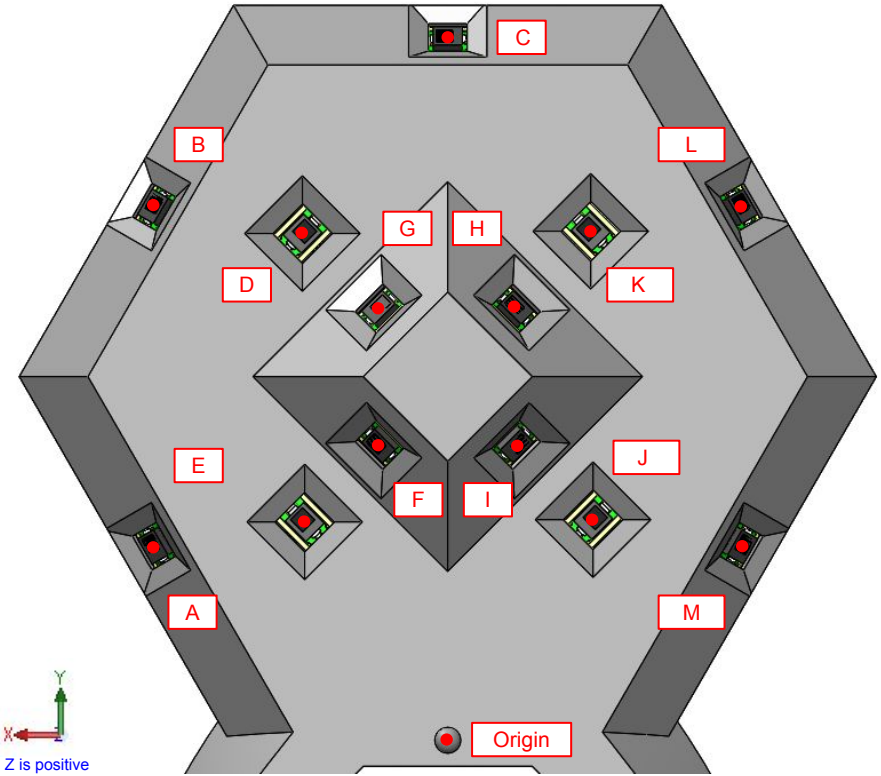
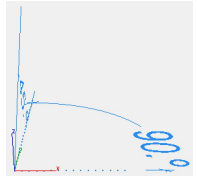
# Class Exercise

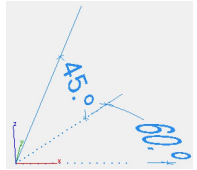



| Point | X-location (mm) | Y-location (mm) | Z-location (mm) |
|---|---|---|---|
| Origin | 0 | 0 | 0 |
| A | 45.245 | 29.8776 | 6.71967 |
| B | 45.245 | 82.1224 | 6.71967 |
| C | 0 | 108.2448 | 6.71967 |
| D | 22.386 | 78.03215 | 1.75 |
| E | 22.032 | 33.6143 | 1.75 |
| F | 10.523 | 45.47702 | -3.85659 |
| G | 10.523 | 66.52298 | -3.85659 |
| H | -10.532 | 66.52298 | -3.85659 |
| I | -10.523 | 45.47702 | -3.85659 |
| J | -22.386 | 33.96785 | 1.75 |
| K | -22.032 | 78.3857 | 1.75 |
| L | -45.245 | 82.1224 | 6.71967 |
| M | -45.245 | 29.8776 | 6.71967 |

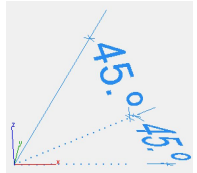
## Unit Vectors Reference




$$(0, \frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}})$$




$$(\frac{\sqrt{3}}{2\sqrt{2}}, \frac{1}{2\sqrt{2}}, \frac{1}{\sqrt{2}})$$



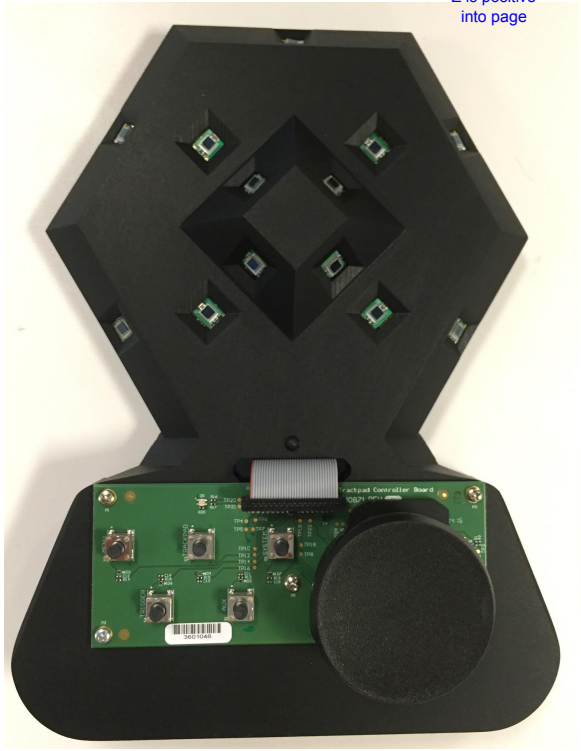

$$(\frac{1}{2}, \frac{1}{2}, \frac{1}{\sqrt{2}})$$

# Class Exercise

| Point | X-location (mm) | Y-location (mm) | Z-location (mm) |
|---|---|---|---|
| IMU | 28.385 | -48.040 | 17.178 |

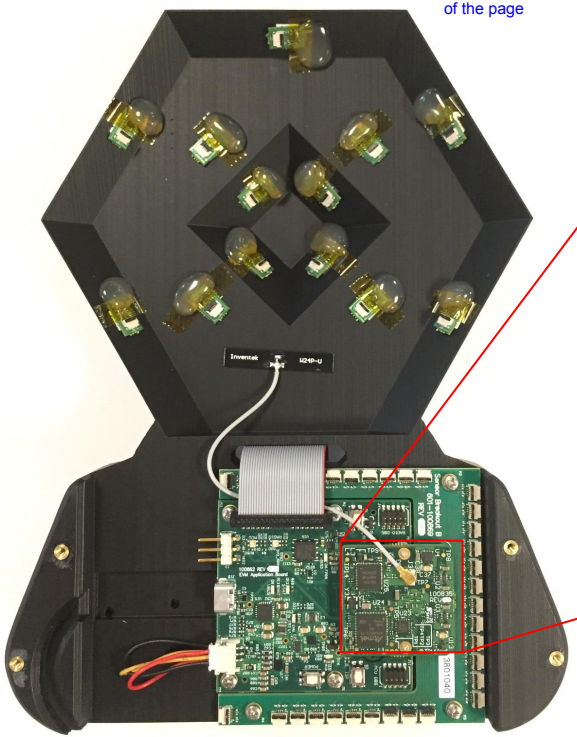
Top View

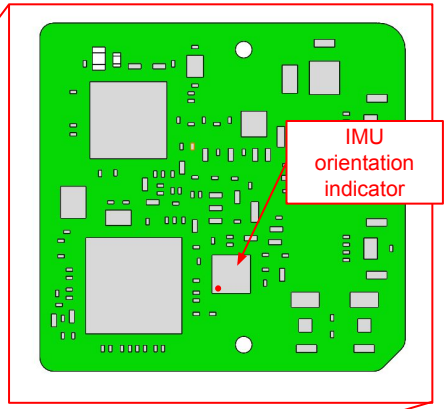

Z is positive into page

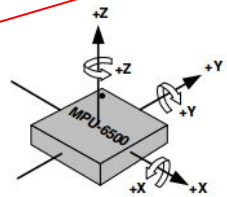


Bottom View


Z is positive out of the page






IMU orientation from Invensense MPU-6500 datasheet