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| |  |  |  | | --- | --- | --- | | **Worksheet for Lab on Rotational Equilibrium** | **Name** |  | |  |  |  | |  | **Date** |  | |
|  |
| |  |  |  | | --- | --- | --- | |  | **Partner #1** |  | |  |  |  | |  | **Partner #2** |  | |
|  |
| **1. Masses on the x axis only** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | | 150 |  | +0.100 | 0 | 0 |  | |  |  | -0.150 | 0 | 0 |  | |  |  |  | **Total** | **0** |  | |
|  |
| **2. Masses on the y axis only** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | |  |  | 0 | +0.075 |  | 0 | | 90 |  | 0 | -0.250 |  | 0 | |  |  |  | **Total** |  | **0** | |
|  |
| **3. Two on x axis, two on y axis** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | | 150 |  | +0.150 | 0 | 0 |  | | 120 |  | 0 | +0.075 |  | 0 | |  |  | -0.750 | 0 | 0 |  | |  |  | 0 | -0.150 |  | 0 | |  |  |  | **Total** |  |  | |
|  |
| **4. Three masses** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | | 100 |  | +0.150 | +0.150 |  |  | |  |  | -0.050 | 0 | 0 |  | |  |  | 0 | -0.050 |  | 0 | |  |  |  | **Total** |  |  | |
|  |
| **5.Another three masses** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | | 300 |  | +0.150 | +0.150 |  |  | |  |  | -0.100 | +0.050 |  |  | |  |  | 0 | -0.125 |  | 0 | | Note: balance torque about y first | | | **Total** |  |  | |
|  |
| **6. Four masses** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass (g)** | **Force (N)** |  |  |  |  | | 100 |  | +0.150 | 0 | 0 |  | | 125 |  | -0.200 | 0 | 0 |  | |  |  | 0 | +0.200 |  | 0 | |  |  | +0.075 | -0.150 |  |  | |  |  |  | **Total** |  |  | |
|  |
| **7. Finding the center of mass of an irregularly-shaped object** |
|  |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Mass M (g)** |  |  |  | **include correct units** | | |  |  |  |  |  |  | | **Mass** |  |  |  |  |  | |  |  | **----** |  |  |  | |  | **----** |  |  |  |  | |
|  |
| **8. Center of mass II** |
|  |
| Note: Fill in the units with the numbers |
| |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | |
|  |
|  |