1. Define the following:

<table>
<thead>
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<th>Definition</th>
<th>Example</th>
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<tbody>
<tr>
<td>Line of action</td>
<td></td>
</tr>
<tr>
<td>Moment</td>
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</table>

2. Draw a free Body Diagram for the blue box:

3. Consider the following situation, where the lamp 4-kg lamp:
   a. Draw the FBD at point B:
   b. What is the Tension in the Cables?
   c. Draw the FBD at point C:
   d. Determine the required force $F$ to hold the 4-kg lamp in place:

4. If the maximum moment magnitude that the stool support can sustain about point $A$ is $M_A = 185\text{lb} \cdot \text{ft}$, what is the maximum height $d_1$ that the stool can have if the magnitudes of the two forces are $F_1 = 35.0\text{lb}$ and $F_2 = 135\text{lb}$?

5. If the Little Shop of Physics Box Weights 15kg and the beam has a uniform density and mass of 2kg:

   a. What is the Tension in the Cable?

   b. What is the Moment Around point A?

6. If $F_1 = 14.3\text{lb}$, $F_2 = 11.5\text{lb}$, $F_3 = 11.6\text{lb}$, $F_4 = 11.2\text{lb}$, $d_1 = 0.500\text{ft}$, $d_2 = 0.900\text{ft}$, and $d_3 = 0.900\text{ft}$, what is $M_A$ the net moment about point $A$ due to these forces?

7. Using the drawing below, what is the moment around point $A$?