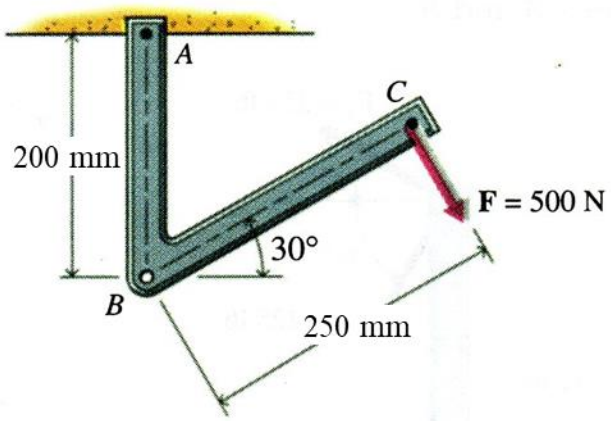
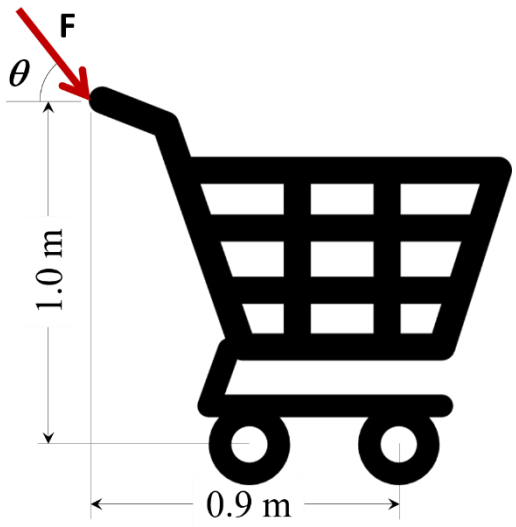
**ENGR/PHYS 216 – Spring 2023**
**HW Assignment 9: Rigid Body Statics**

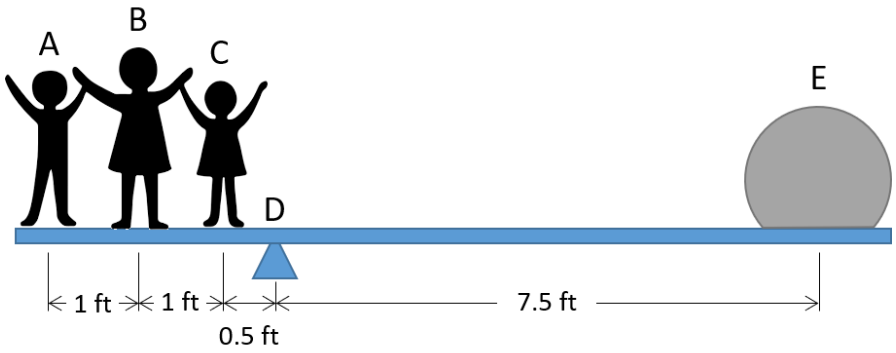
1. Find the moment of the $500\ N$ force shown about Point $A$. Write your answer using 2 significant digits.



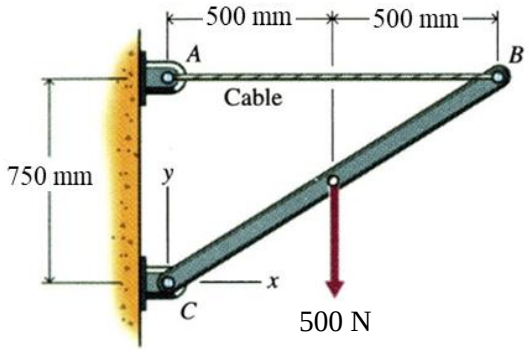

2. A $75\ N$ force is applied at an angle of $60°$ from the horizontal to the handle of a shopping cart as shown. Determine the moments of the force about (a) the front wheel and (b) the back wheel. The distance between the wheels is $0.7\ m$. Write your answers using 2 significant digits.



3. Three kids stand on a see-saw as shown. The see-saw has a uniform cross section and weighs $15\ lb$, while kids A, B, and C weigh $35\ lb$, $45\ lb$, and $25\ lb$, respectively. Determine the weight of the rock at point $E$ required for the system to maintain a perfect balance, and the reaction at support $D$. Write your answers using 3 significant digits.




4. A pipe strut $BC$ is loaded and supported as shown. The strut has a uniform cross section and a mass of $12\ kg$. Determine the tension in the cable and the reaction at support $C$. Write your answers using 3 significant digits.




5. Determine the force exerted by the cable at $B$ and the reaction at support $A$ for the bar shown. You may assume the bar is massless for the analysis. Write your answers using 3 significant digits.