To do ...

- HW 9 ME (extended) due **Sat**

- WA 5 due **Sun**

- HW 10 PL due **Tues**

- Quiz 3 sign up – **DO IT!**
Two-force members

In the cases above, members AB can be considered as two-force members, provided that their weight is neglected.
If the crane boom and truck have a mass of 18 Mg and 1.8 Mg at $G_1$ and $G_2$, respectively, determine the reactions at each of the four outriggers as a function of the boom angle when the boom is supporting a load having a mass of 1.2 Mg.
Given the 4kN load at B of the beam is supported by pins at A and C. Find the support reactions at A and C.
The lever $ABC$ is pin supported at $A$ and connected to a short link $BD$. If the weight of the members is negligible, determine the reaction forces at pins $D$ and $A$. 
The woman exercises on the rowing machine. If she exerts a holding force of \( F = 200 \text{ lb} \) on the handle ABC, determine the reaction force at pin C and the force developed along the hydraulic cylinder BD on the handle.
Constraints

To ensure equilibrium of a rigid body, it is not only necessary to satisfy equations of equilibrium, but the body must also be properly constrained by its supports.

- **Redundant constraints**: the body has more supports than necessary to hold it in equilibrium; the problem is STATICALLY INDETERMINATE and cannot be solved with statics alone.

- **Improper constraints**: In some cases, there may be as many unknown reactions as there are equations of equilibrium. However, if the supports are not properly constrained, the body may become unstable for some loading cases.