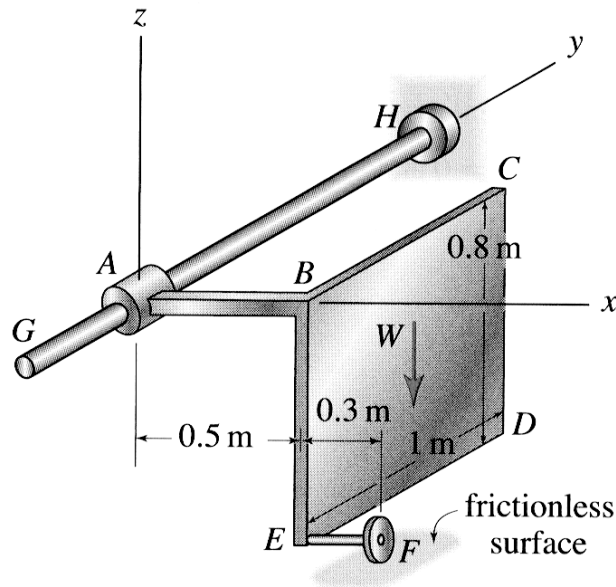
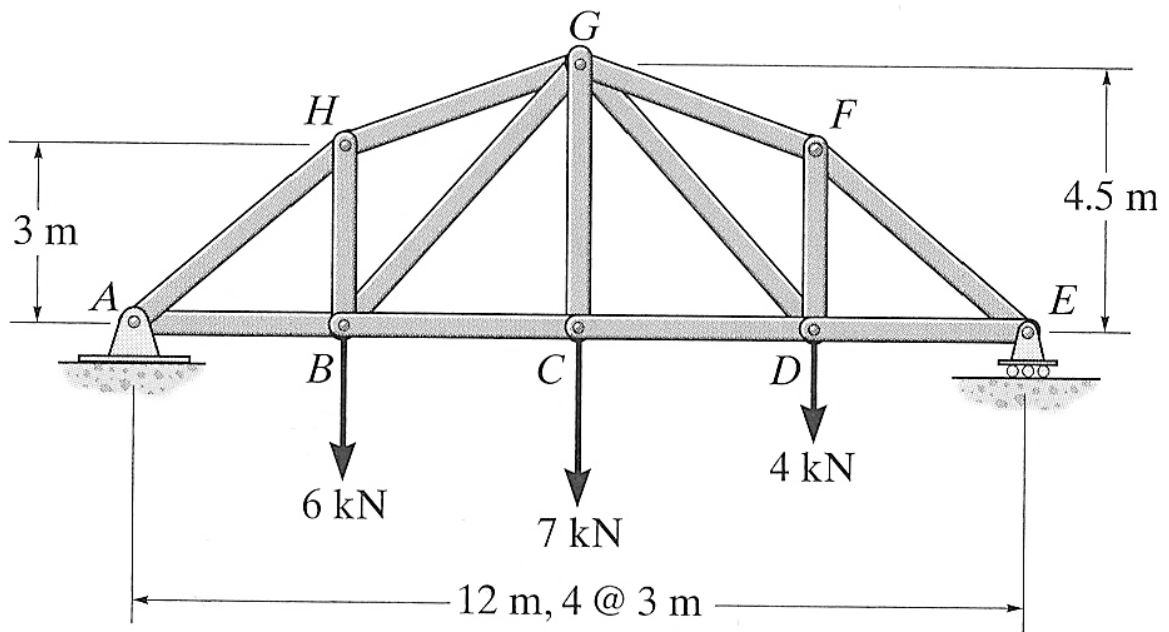


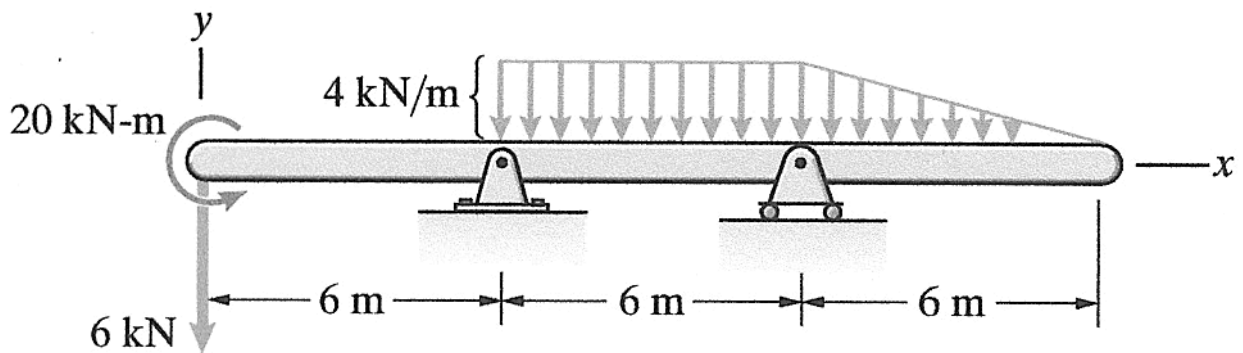
1. (25 pts) The arm AB is connected to the rest of the crane by the pin at A. Cables DC and BC are two separate cables (and therefore with different tensions) attached at C. For the 5 kN load shown, find the tension T in the hoist line, the tension in cable BC, and the forces on arm AB exerted by pin A. Ignore the weight of the structural elements.



2. (25 pts) Solve for all external reactions acting on the sliding door ABCDEF. You may assume that the entire weight of the door ($W = 800 \text{ N}$) acts at the center of rectangle BCDE.



3. (25 pts) Determine the forces in members HG, BG, and BC and state whether they are in tension or compression.



4. (25 pts) For the beam shown above, draw clearly labeled, quantitative diagrams for $q(x)$, $V(x)$, and $M(x)$.