

Alfred Larsen  
Civil 231 Photo Contest #1  
Title: Freeloading in the Garden  
Location: UBC Rose Garden



The above picture shows three simply supported beams with different loads and below the analysis of the system. Each bench can support a load and is attached to the ground by steel supports, which act like a pin and roller. On the left, Robbe is uniformly distributing himself over the bench. As he is approximately symmetrical, he loads the bench with a uniform load,  $w$ . Each support has a reaction of  $qL/2$ , which they transfer to the concrete slab beneath the bench. Joe is tall and thin, so he made himself into a point load,  $P$ . Due to his positioning in the centre of the bench, each support takes  $P/2$ . Again, these supports transfer the load to the concrete foundation. Finally, on the right, Ben has fashioned himself into a linearly decreasing (or increasing) distributed load, of maximum intensity of  $q_0$ . As he is not symmetrically loaded, the supports have different reactions, with the left support having a reaction of  $q_0L/6$  and the right of  $2q_0L/3$ . This load is then transferred again to the concrete slab, which distributes it effectively upon the soil beneath the benches, keeping the beams stable.

