

Math 142-1, Group work 2

Problem 1

A mass m is suspended by a cable from a truss bridge constructed from seven identical beams in the shape of three equilateral triangles. The two ends of the bridge rest on top of concrete blocks and are able to slide on top of them. The beams are connect by pins at their ends, which can rotate freely. Find the tension of the cable T_0 and each beam T_1, \dots, T_7 (use the convention that negative tension indicates a beam under compression). Assume the bridge's mass is negligible and that nothing is moving.

