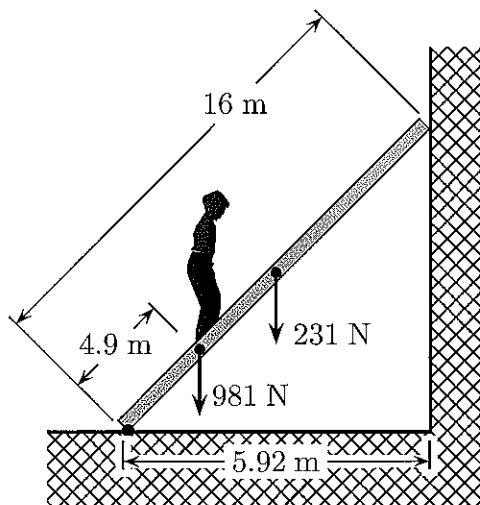

012 (part 1 of 2) 10.0 points

A 16 m ladder whose weight is 231 N is placed against a smooth vertical wall. A person whose weight is 981 N stands on the ladder a distance 4.9 m up the ladder. The foot of the ladder rests on the floor 5.92 m from the wall.



Calculate the force exerted by the wall.
Answer in units of N

013 (part 2 of 2) 10.0 points

Calculate the normal force exerted by the floor on the ladder.

Answer in units of N

014 10.0 points

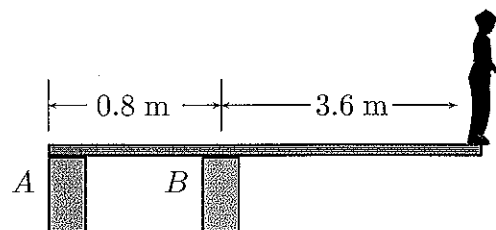
A 5.53 m, 203 kg uniform ladder rests against a smooth wall. The coefficient of static friction between the ladder and the ground is 0.545, and the ladder makes a 34.9° angle with the ground.

How far up the ladder can an 812 kg person climb before the ladder begins to slip? The acceleration of gravity is 9.8 m/s^2 .

Answer in units of m

015 (part 1 of 2) 10.0 points

The uniform diving board has a mass of 33 kg.



Find the force on the support A when a 65 kg diver stands at the end of the diving board. The acceleration of gravity is 9.81 m/s^2 .

Answer in units of kN

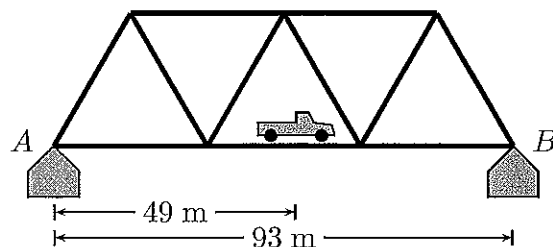
016 (part 2 of 2) 10.0 points

Find the force on the support B at that same instant.

Answer in units of kN

017 10.0 points

A bridge of length 93 m and mass $1 \times 10^5 \text{ kg}$ is supported at each end. A truck of mass 21400 kg is located 49 m from the left end.



What is the force on the bridge at the left point of support? The acceleration of gravity is 9.8 m/s^2 .

Answer in units of N