[mex231] Lateral force on hanging chain

Consider a chain of N links in the form of uniform rods of mass m and length $2l$ each, connected by frictionless hinges. At one end the chain is attached to a stationary pivot. The other end is pulled sideways by a constant force F. The links are numbered N through 1 from the pivot outwards. Find the angle θ_n between link n and the horizontal for $n = 1, 2, \ldots, N$ at equilibrium.

Solution: