1. A particle is moved along the x-axis by a force that measures $10/(1+x)^2$ pounds at a point x feet from the origin. Find the work done in moving the particle from the origin to a distance of 9 ft.

2. A force of 10 lbs is required to hold a spring stretched 4 in. beyond its natural length. How much work is done in stretching it from its natural lenth to 6 in. beyond its natural length?

3. A heavy rope, 50 ft long, weighs 0.5 lbs/ft and hangs over the edge of a building 120 ft high. How much work is done in pulling the rope to the top of the building?