

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 length 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?