A particle of mass $0.3 \,\mathrm{kg}$ is attached to one end of a light elastic string of natural length $0.6 \,\mathrm{m}$ and modulus of elasticity $9 \,\mathrm{N}$. The other end of the string is attached to a fixed point O on a smooth horizontal surface. The particle is projected horizontally from O with speed $4 \,\mathrm{m \, s^{-1}}$. Find the greatest distance of the particle from O.