

Physics 10154 - Quiz 9B

A cylinder ($I = 0.5MR^2$) with a mass of 5.22 kg and a radius of 3.85 cm is rolling without slipping and has an initial linear speed of 5.69 m/s. It encounters a ramp angled 36.0° above the horizontal. While rolling up the ramp, frictional forces do -18.0 Joules of work.

How far does the cylinder roll up the ramp before stopping?