An object of mass \( m \) is released from an initial state of rest from a spring of constant \( k \) that has been compressed a distance \( x_0 \). After leaving the spring (at the position \( x = 0 \) when the spring is unstretched) the object travels a distance \( d \) along a horizontal track that has a coefficient of friction that varies with position as

\[
\mu = \mu_0 + \mu_1 \left( \frac{x}{d} \right).
\]

Following the horizontal track, the object enters a quarter turn of a frictionless loop whose radius is \( R \). Finally, after exiting the quarter turn of the loop the object travels vertically upward to a maximum height, \( h \), (as measured from the horizontal surface). Let \( g \) be the gravitational constant. Find the maximum height, \( h \), that the object attains. Express all answers in terms of \( m, k, x_0, g, \mu_0, \mu_1, d \) and \( R \); not all variables may be needed.