

In the figure below, a block is placed in the upper left corner at $s = 0$ and then released from rest. The block slides down the ramp past points labeled 'a' through 'j'. Shortly after passing through point 'j', the block turns around and heads back down the ramp.

Assume that the ramp is frictionless, except for the three intervals where the track is shaded. At all three intervals of friction, assume that the coefficients of kinetic friction, μ_k are identical. Furthermore, as the block travels over friction from point 'a' to point 'b', it has a constant speed.

On the axes below, draw plots of $s(t)$, $\dot{s}(t)$ and $\ddot{s}(t)$, where $s(t)$ is the distance of the block from its starting point, along the path. On the axes, t_h denotes the time the block passes point 'h', and t_{h2} is the time it passes the same point a second time. Other times are labeled similarly.

