

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'.

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,  $\mu_k$  are identical. Furthermore, assume that as the block travels over friction from point 'i' to point 'j', 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'. Other times are labeled similarly.

