



Let  $X$  be the  $x$ -coordinate of the wedge, and let  $(x, y)$  be the coordinates of the block. Let  $h$  be the height of the wedge.

Then  $(x - X) = (h - y) \cot(\theta).$

Differentiating twice w.r.t. time

$$\ddot{x} - \ddot{X} = \frac{-\ddot{y}}{\tan \theta}$$

The force on the wedge & block is

$$F = (M + m)A, \text{ where } M = \text{mass of wedge.}$$

The forces acting on the block are

