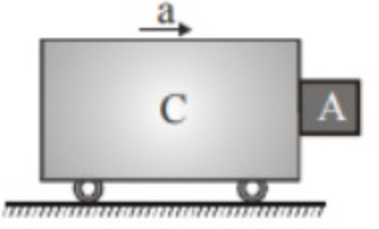
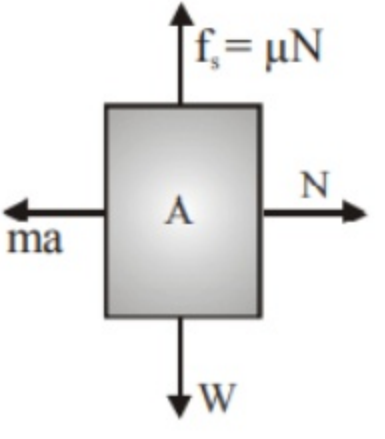
Consider this figure show here of a moving cart C. If the coefficient of friction between the block A and the cart is u, then calculate the minimum accleration a of the cart so the block does not fall





Sol. The forces acting on the block A (in block A's frame (i.e. non inertial frame) are :

For A to be at rest in block A's frame i.e. no fall,

we require $W = f_s$ $\Rightarrow mg = \mu(ma)$ Thus $a = \frac{g}{\mu}$