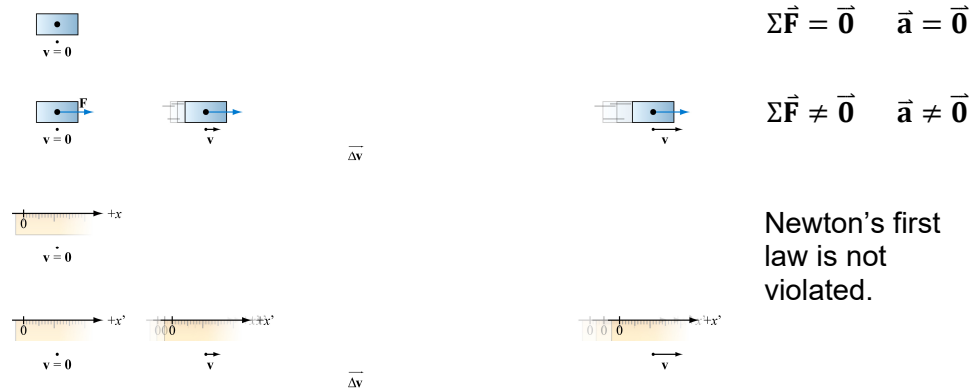
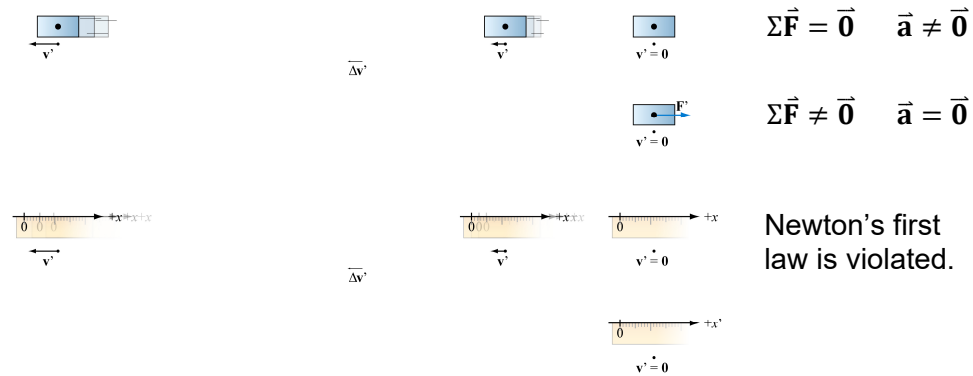


Accelerated reference frames and fake forces (non-relativistic)

Camera tracks inertial reference frame



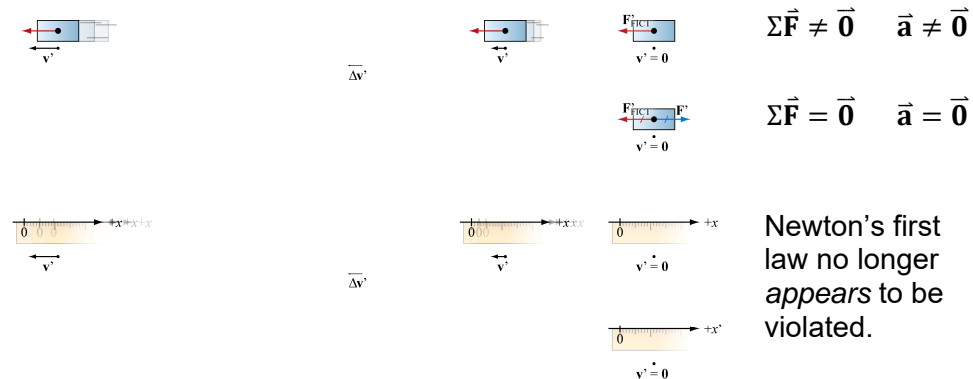
Camera tracks non-inertial reference frame



Tell a lie while camera tracks non-inertial reference frame

Add a fictitious force to each mass to make it seem as though Newton's first law is not violated in this frame.

Magnitude: $F_{\text{FICT}} = ma_{\text{NON-INERTIAL}}$
 Direction: Opposite acceleration of non-inertial frame relative to inertial frame



Vocabulary

Apparent gravitational force:

$$\vec{F}_G + \vec{F}_{\text{FICT}} = \vec{F}_{G \text{ EFFECTIVE}}$$