Lecture 16

Fri: HW by 5pm

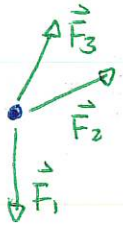
Ex 166, 169, 173, 176, 180, 183, 185, 187

Mon: Warm Up 7 D2L

Newton's Second Law

The steps in Newton's Second Law are:

① Identify all forces on an object and represent these in a free-body diagram



② Write Newtons 2nd Law in component form

$\sum F_{ix} = ma_x$ ← insert info about acceleration

$\sum F_{iy} = ma_y$

③ Find components (or expressions for them) for each force in FBD

④ Insert components into 2nd Law Algebra gives results.

Equilibrium

If the acceleration of an object is zero then the object is in equilibrium. A typical example is an object at rest. This is important for analyzing the stability of structures such as buildings and bridges.

In this case $\vec{F}_{net} = 0 \Rightarrow$ $\sum F_{ix} = ma_x$ → BOTH matter!

$\sum F_{iy} = ma_y$

Warm Up 1 (2 from previous)

Exercise

~~Quiz~~