PHYS 4A Exam 1 Cheat Sheet (DA IV)

Write Units

Kinematic equations

When doing a problem, account for all the variables you know the values of and all those you don’t know the value of.

Freefall

An object is in freefall iff the only force acting on it is gravity

Kinematic equations apply to freefall

Unless stated otherwise, gravitational acceleration g=-9.81m/s2

Vectors

Vectors work as their separate parts for kinematic eq’ns

Project

Motion in 2D+ (uses vectors)

Generally, vertical motion is freefall, horizontal motion is constant

x-value = magnitude times cosine of angle

y-value = magnitude times sine of angle

Uniform Circular Motion

Force

Force on an object is always represented on a FBD as starting from that object

Force on an object is calculated from that object’s mass and consequent acceleration

There is no technical equation for the tension force. Treat it as an unknown when it is included.