Summary Thus Far

A. Summary of Newton's Laws
   a. $F_{net}=0$
   b. $F_{net}=ma$
   c. $F_{AonB}=F_{BonA}$
   d. Larger mass=more inertia
B. Types of Forces
   a. Gravitational: mg, acts downwards
   b. Tension: acts in a spring or cable, has the same magnitude all along the spring/cable, F_T or T
   c. Normal: perpendicular to surface, F_N or N
   d. Friction
C. Friction
   a. Force that acts between 2 surfaces in contact
   b. Static friction: keeps objects stationary when sliding would otherwise occur
   c. Kinetic friction: when 2 surfaces are sliding against each other
   d. Force is always in the direction that opposes motion or potential motion
   e. F_f is less than or equal to uF_N where u=coefficient of friction
   f. Is NOT a vector equation
D. Coefficient of Friction
   a. Static friction varies in magnitude so the object stays stationary
   b. Kinetic friction should be constant
   c. For most cases u_k will be less than u_s
   d. Is always positive

Uniform Circular Motion

A. Intro
   a. Something moving in a circle with a constant speed v
   b. Velocity is always tangential to the circle
   c. A=change in v/change in t
   d. The change in velocity will always point towards the center of the circle
B. Centripetal Acceleration
   a. Objects are kept on a circular path
   b. $A_r=v^2/r$
   c. Acceleration will always point towards the center of the circle
   d. Velocity is always tangential to the circle (v_T)
   e. Velocity and acceleration are always perpendicular
C. Period and Frequency
   a. Period-T: time it takes for one complete revolution around the circle
   b. Frequency-f: number of revolutions per second
   c. Are always inverses of each other
   d. T=1/f
D. Calculating Speed
   a. V=distance/time=circumference/period=(2pir/T)
E. The Dynamics of Uniform Circular Motion