Chapter 7

**Rotational Motion**

  (7.3)

**Angular velocity of a particle in uniform circular motion**

  (7.4)

**Angular displacement for uniform circular motion**

  (7.7)

**Relationship between speed and angular speed**

 (7.8)

**Angular acceleration for a particle in nonuniform circular motion**

 (7.9)

**Relationship between tangential and angular acceleration**

  (7.10)

**Torque due to a force with perpendicular componentacting at a
distance *r* from the pivot**

  (7.11)

**Torque due to a force *F* with moment arm**

  (7.21)

**Moment of inertia of a collection of particles**

**Newton’s second law for rotation** An object that experiences a net torque about the axis of rotation undergoes an angular acceleration

  (7.22)

where *I* is the moment of inertia of the object *about the rotation axis*.

  (7.23)

**Motion constraints for an object connected to a pulley of radius *R*
by a nonslipping rope**