Department of Mechanical Engineering

ES 204   Mechanical Systems
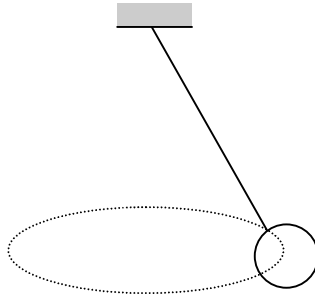
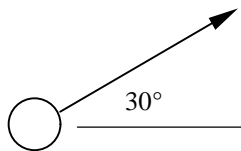Quiz - Le 04   Name: _____

1. A bus is traveling on a curve of radius 200 m at a constant speed of 20 m/s. What is the magnitude of the acceleration of the bus?

2. A ball is swinging in a horizontal circle as shown at a constant speed. On the figure draw the direction of the normal acceleration.
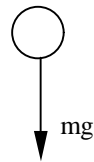
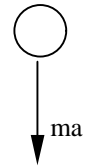3. A baseball is thrown as shown below.   A FBD and KD of the ball are given below.

FBD   KD

30°

FBD   mg   KD   ma

a) Draw the normal and tangential directions on the FBD and KD *at the instant shown* (be sure to label the angle of the tangential direction with respect to the horizontal).

b) What is the normal acceleration in m/s^2 *at the instant shown*?

c) What is the radius of curvature of the path *at the instant shown*?