

CIVE 261 - DYNAMICS

MID TERM #2

Date: November 13, 2009

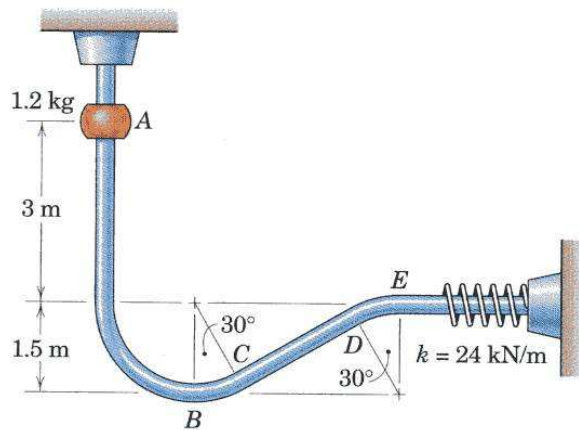
Time: 1:00 – 1:50 pm

Prof. P.Y. Julien

Name: _____

(50 points)

The 1.2 kg ring is released from rest at point A. It slides without friction along the guide shown on the figure. Calculate the weight of the ring in N. Determine its maximum velocity in m/s at point B. As the ring deforms the spring past point E, calculate the maximum deformation δ of the spring in mm. Draw a Free Body Diagram of the ring and calculate the direction and magnitude of the maximum spring force in N at the point of maximum spring deformation.



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A baseball weighing 5.2 oz (1 lb = 16 oz) is hit as shown on the figure below. Determine the mass of the ball in slugs. Draw a Free Body Diagram of the ball during the 0.03 second impact. Determine the horizontal x and vertical y components of the force exerted by the bat on the ball during impact. Calculate the net magnitude of the force in lb and the angle of the impact force with the horizontal.

