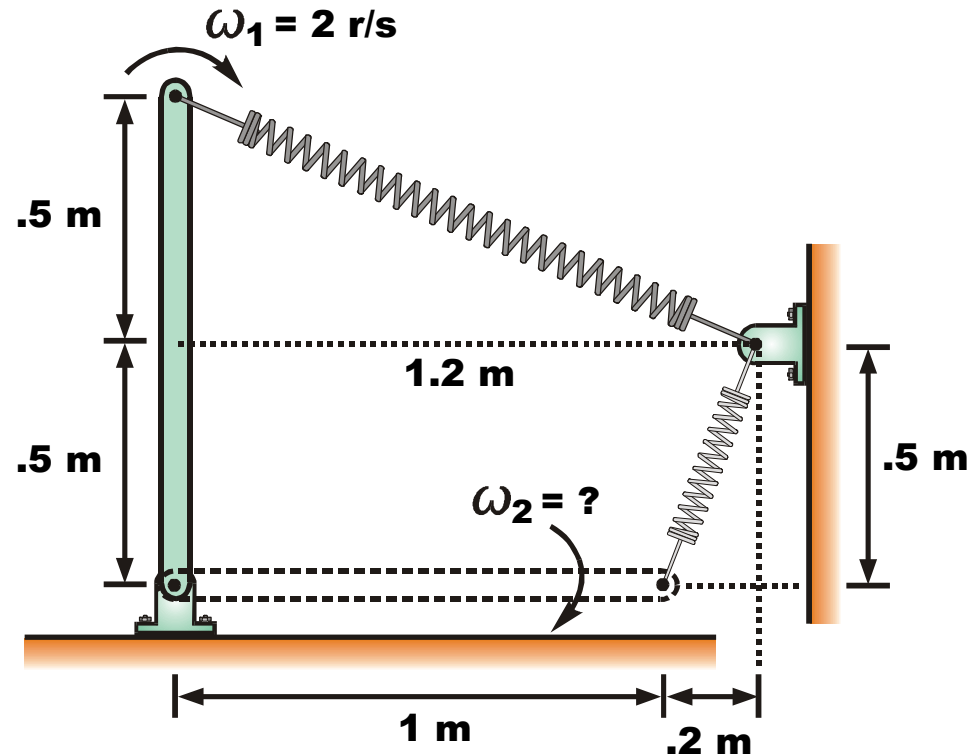


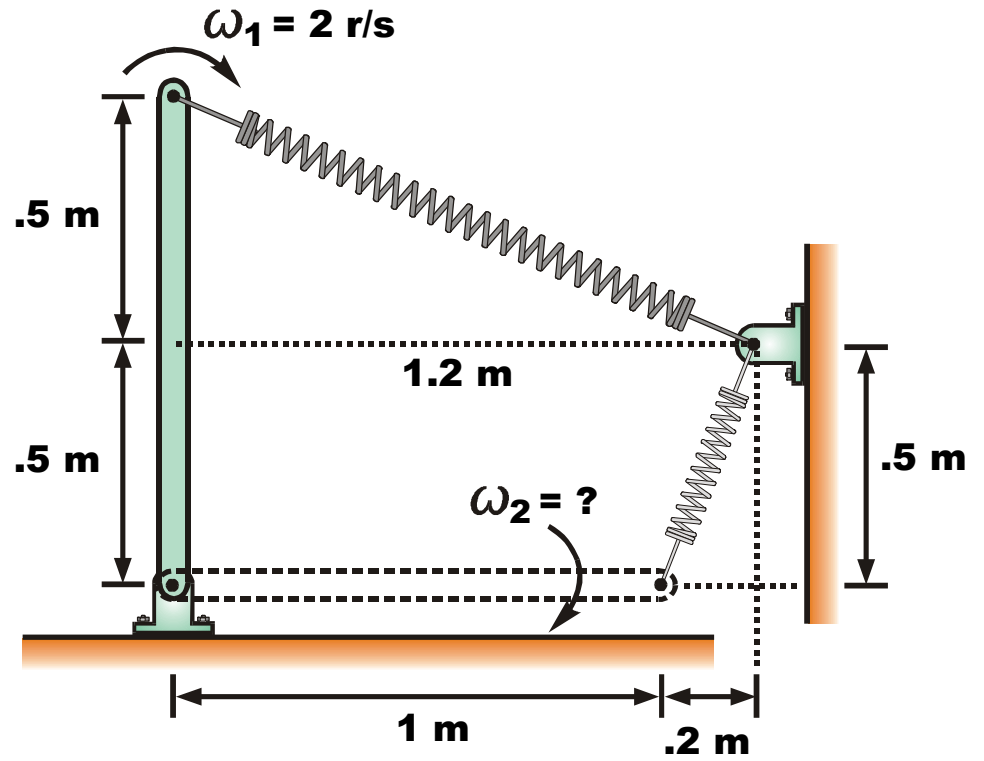
Exam 4A, Fall 2005: Problem 2 (Rigid Body WE)

2. (25 points) Shown below is a 1 m long, 10 kg rotating slender bar, initially in the vertical position (with  $\omega_1 = 2 \text{ rad/sec}$ ). Attached to it is a massless spring ( $k = 100 \text{ N/m}$ , unstretched length = 0.4 m). Please determine  $\omega_2$  when the bar is horizontal.



1 m, 10 kg  
Slender Rod

Spring:  $k = 100 \text{ N/m}$   
Unstretched:  $L_0 = .4 \text{ m}$



<b>1 m, 10 kg Slender Rod</b>	<b>Spring: <math>k = 100 \text{ N/m}</math> Unstretched: <math>L_0 = .4 \text{ m}</math></b>
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