

Name \_\_\_\_\_

Homework Assignment #8 due in class Wednesday, October 25

*Cover sheet : Staple this page in front of your solutions.*

Write the *answers* (without calculations) on this page; write the detailed *solutions* (written clearly) on your own paper.

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[37] Problem 4.26.\* *Answer: What is  $dE/dt$ ?*

$$dE/dt = m y dg/dt \quad (1 \text{ point})$$

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[38] Problem 4.28 and 4.29.\*\*\* [computer]

For #4.29, hand in the computer program and any plots.

*Answer: What is the period for #4.29 part (d)?*

$$\text{period} = 3.71 \text{ s} \quad (1 \text{ point}) ; \text{ plots } (2 \text{ points})$$

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[39] Problem 4.33.\*\* [computer]

Hand in the computer program and any plots.

*Answer: Did you hand in the computer results?*

YES ; plots (2 points)

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[40] Problem 4.34.\*\*

*Answer: What is the period if the length is 1 m?*

$$\text{period} = 2.007 \text{ s} \quad (2 \text{ points})$$

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[41] Problem 4.37.\*\*\* [computer]

Hand in the computer program and any plots.

*Answer: Did you hand in the computer results?*

YES ; plots (2 points)

*Answer: What is the critical ratio  $m/M$ ?*

0.725 (1 point)

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[42] Problem 4.38.\*\*\* [computer]

Hand in the computer program and any plots.

*Answer: Did you hand in the computer results?*

*Answer: Explain what becomes of  $\tau$  as the amplitude of oscillation approaches  $\pi$ .*

plot = 2 points

$\tau$  approaches  $\infty$  because  $\theta = \pi$  is

an equilibrium configuration although unstable). (1 point)