Math 310 – Homework #6 Cover Sheet **name**:

- tutorial, check one: ◯ T9:30; ◯ T10:30; ◯ T11:30; ◯ R10:30; ◯ R11:30; ◯ R12:30.

- begin each problem on a new page & clearly identify each question.
- use words to describe your procedures & to interpret your results.
- put boxes around your final results.
- due on friday 18 september at start of lecture.

question #	CONCEPT keywords & MAIN formula/result
# 3.8.4	concept
	result
# 3.8.24	
# 3.9.2	
# 3.9.15	
plot	

- problems for submission are indicated in **bold**.
- homework portfolios will also be graded on completeness & presentation.

Section 3.8

- practice: # 1-3, 13, 15, 16, 18

#4 produce a plot of $u = -2\cos \pi t - 3\sin \pi t$ and indicate that the amplitude and phase shift agree with the theory.

#24 use the Maple worksheet *sheet03.mws* to verify your result. Label the all the evidence (IVs, period, amplitude).

Section 3.9

- practice: # 14

#2 produce a plot of $u = \sin 7t - \sin 6t$. Indicate both the oscillation and beat periods and verify that they agree with the analysis.

#15 solve as three IVPs – that is, use the end values from each interval as the IVs for the next. Plot the solution for $F_0 = 1$.

Plot Exercise

- make a plot like Figure 3.9.4 with the ODE changed to $u'' + bu' + u = 3\cos 2t$ for $b > 2$. Discuss & explain.

Bonus: # 3.8.27

- if you choose to hand in, submit separately from the rest of the assignment.
- use this sheet as cover page & as the first page of your solution.