

HOMEWORK 11
DIFFERENTIAL EQUATIONS
DUE 09-17

Show your work!

- (1)
 - (a) Find the general solution of $\dot{y} + 2y = e^t$. Graph your particular solution y_p found by the method of undetermined coefficients, and several other solutions, on the same set of axes.
 - (b) Find the general solution of $\dot{y} + y = \sin(t)$. Make a graph as in (a).
 - (c) Use your results from (a) and (b) to explain, in full, complete English sentences, why the solution y_h of the associated homogeneous equation is often called *transient* *.
- (2) **Five** book problems: #1.8.9, 13, 20, 24, 32.

* For another point of view, you may want to check the behaviour of the example $\dot{y} - 2y = e^{-t}$ on your own. However, doing so is *not* required.