Name and section: _____

1. (5 points) Give the general solution to the following equation:

$$\begin{bmatrix} y_1'(t) \\ y_2'(t) \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix} \begin{bmatrix} y_1(t) \\ y_2(t) \end{bmatrix}$$

2. (5 points) Find all possible real values for λ such that ODE $\lambda y'' + y = 0$ with boundary value $y(0) = 0, y(\pi/2) = 0$ has non-trivial solution.