## Dr. Z.'s Calc5 Homework assignment 11

1. Find the eigenfunctions and the equations that define the eigenvalues for the following boundary value problem.

$$
y^{\prime \prime}+\lambda^{2} y=0 \quad, \quad y(0)=0 \quad, \quad y(1)+2 y^{\prime}(1)=0 .
$$

2. Find the eigenfunctions and the equations that define the eigenvalues for the following boundary value problem.

$$
y^{\prime \prime}+\lambda^{2} y=0 \quad, \quad y^{\prime}(0)=0 \quad, \quad y(2)-3 y^{\prime}(2)=0 .
$$

3. Find the eigenfunctions and eigenvalues for the following boundary value problem.

$$
y^{\prime \prime}+\lambda^{2} y=0 \quad, \quad y^{\prime}(0)=0 \quad, \quad y(\pi)=0
$$

4. Find the eigenfunctions and eigenvalues for the following boundary value problem.

$$
y^{\prime \prime}+\lambda^{2} y=0 \quad, \quad y(0)=0 \quad, \quad y(2 \pi)=0
$$

5. Find the eigenfunctions and the equations that define the eigenvalues for the following boundary value problem.

$$
y^{\prime \prime}+\lambda^{2} y=0 \quad, \quad y(0)=0 \quad, \quad y(10)+5 y^{\prime}(10)=0
$$

