1. Do you know how to numerically solve a system of ODEs and plot the solution?

2. Do you know how to solve the ODE $y''' + 3\,y'' + 2\,y = t^2$? If so outline the process for me and explain an appropriate set of initial conditions.

3. Do you know how to solve the ODE system $\begin{aligned} y_1' &= -3\,y_1 + 2\,y_2 + t \\ y_2' &= -2\,y_2 + y_1 - t^2 \end{aligned}$? If so outline the process for me and explain an appropriate set of initial conditions.

4. Do you know how to solve the ODE system $y'' + y = \frac{1}{2+\cos(t)}$? If so outline the process for me and explain an appropriate set of initial conditions.

5. Do you know an existence and uniqueness theorem for ODEs? If so outline the what it means and why it matters.

6. (no points here) Describe your previous experience with ODEs.