Math 342 - Interpolation **Name:** _____

Consider the points $(0,0), (1,1), (2,-2), (3,3)$.

1. Find a formula for a 3rd degree interpolating polynomial p_3 using the Lagrange basis for the points above.

2. Use divided differences to find the formula for p_3 in the Newton basis.

3. What is the Vandermonde matrix equation for the coefficients of p_3 in the standard basis? You don't need to solve the system.