Name:

1. Suppose we want to find a polynomial $p(t) = c_1 + c_2 t$ passing through the three points with (t, y) coordinates given by $(-1, 0)$, $(1, 3)$ and $(2, 4)$. This can't be done, of course. Nevertheless, set up a system of the form $Ac = b$ to solve for the coefficients $c = (c_1, c_2)$. Your answer will consist of a 3×2 matrix A with numerical entries and a 3-vector b also with numerical entries.

2. Now set up the normal equation used to solve for the least squares solution. You do **not** need to solve the system. Your answer will be in the form $Bc = d$ where B is a matrix with numerical entries and d is a vector with numerical entries.

3. (Extra credit) Solve the system.