

Name:

1. Compute the convolution $a*b$ where $a = (0.1, 0.3, 0.2)$ and where $b = (1, 0, 0, 0, 0, 0, 1)$.

2. In this problem we represent polynomials as a vector of coefficients. For example, $p(t) = c_1 + c_2t + c_3t^2$ is represented by the vector $c = (c_1, c_2, c_3)$.

Determine a matrix D such that if $p(t) = c_1 + c_2t + c_3t^2$ is a quadratic polynomial, then $d = Dc$ is the coefficients of the derivative polynomial $p'(t) = d_1 + d_2t$.