

1. (10 points)

Given three collinear points, we proved in class that there is no second degree polynomial that passes through these points. Does there exist a third degree polynomial (i.e., $p(x) = a_1 + a_2x + a_3x^2 + a_4x^3$, with $a_4 \neq 0$) that passes through the three points $(0, 0)$, $(1, 1)$ and $(2, 2)$? If such a polynomial exists, find it.

Use pencil and paper.

2. (10 points)

Do P.2.1.4 from textbook.