Problem 1. Consider all lines which meet the graph of
\[ y = 2x^4 + 7x^3 + 3x - 5 \]
in four different points, say \((x_i, y_i)\) for \(i = 1, 2, 3, 4\). Show that \(\frac{x_1 + x_2 + x_3 + x_4}{4}\) is independent of the line and find its value.