Assignment 8

[1pt] 1. Compute the sum $(3 + 7i) + (5 - 2i)$.

[1pt] 2. Compute the product $(2 + 8i)(3 - 6i)$.

[1pt] 3. What is the complex conjugate of $7 - 4i$?

[2pt] 4. Compute the quotient $(2 + 3i)/(1 - 5i)$.

[2pt] 5. Factor the polynomial $p(x) = x^3 - 17x^2 + 96x - 182$ given that $5 + i$ is a root of p.

[1pt] 6. Plot the number $-3 + 5i$ in the complex plane.

[2pt] 7. Give a proof of property 3 of the complex conjugate: If z_1 is a complex number, then z_1 is purely imaginary if and only if $\overline{z_1} = -z_1$.