

HW#2

1. Show that $X^5 + X^3 + 1$ is irreducible over $\text{GF}(2)$. You may use the statement “gfdeconv” in MATLAB to help.
2. Construct a table for $\text{GF}(2^3)$ based on the primitive polynomial $P(X) = X^3 + X + 1$. Display the power, polynomial, and vector representations of each element. Determine the order of each element.