

Fall 2023, Math 320: Preliminary Problem Set 12
Due: Thursday, November 16th, 2023
Quotient Rings

Preliminary problems. These problems should be completed before discussion on Thursday.

(P1) List all 9 elements of $\mathbb{Z}_3[x]/\langle x^2 + x + 1 \rangle$, with no repetition.

(P2) Locate a nonzero element $a \in \mathbb{Z}_3[x]/\langle x^2 + x + 1 \rangle$ such that $a^2 = [0]$.