

Day 32: Introduction to Quotient Rings

1. Whiteboard pages 1 through 5.

- **Page 4:** See Chapter 32 for the technical details behind coset multiplication.

2. **Work on Day 32 Class Work. Leave 10 – 15 minutes for discussions.**

3. Whiteboard pages 6 through 9.

Proof of the Day: Shown in video only. (This is Chapter 32, Exercise #9c.)

If $a_1x + a_0 \neq b_1x + b_0$ in $\mathbb{Z}_3[x]$, then $(a_1x + a_0) + \langle x^2 \rangle \neq (b_1x + b_0) + \langle x^2 \rangle$ in $\mathbb{Z}_3[x]/\langle x^2 \rangle$.