Proposition 2.33: Let A be a nonempty subset of Z. Suppose for some $b \in \mathbb{Z}$ that $b \leq a$ for all $a \in A$. Then A has a least element.

Hint: Proving the Well-Ordering Principle was hard work. But proving this proposition should not be. Just reformulate it into a form where you can apply the Well-Ordering Principle.

Proposition 2.E: Suppose $n, m \in \mathbb{Z}$ and $n > m$. Then $-n < -m$.

Proof. Your proof goes here. □

Proposition 2.G: Suppose $n, m, p \in \mathbb{Z}$, $n > m$, and $p < 0$. Then $pn < pm$.

Proof. Your proof goes here. Be lazy! □

Proposition 2.10: The equation $x^2 = -1$ has no solution in $\mathbb{Z}$.

Proof. Your proof goes here. □

Proposition 2.11: Suppose $m \in \mathbb{N}$ and and $n \in \mathbb{Z}$. If $mn \in \mathbb{N}$ then $n \in \mathbb{N}$.

Proof. Your proof goes here. □

Proposition 2.20: For all $n \in \mathbb{N}$, $n \geq 1$.

Proof. Your proof goes here. □