Math 2001, Spring 2023. Katherine E. Stange.

1 Assignment

Prove that the set $\{2x + y : x \in \mathbb{Z}, y \in \{1, 0\}\}$ is the set of all integers.

Hints: You might find Example 1.2 is helpful for inspiration, but don't try to copy the format. Write it the way you feel is best. Also, it may be helpful to start writing out examples of things in the set. For example, taking $x = 1, y = 1$ *gives* $2x + y = 3$*, so* 3 *is in the set.*