# Math 2326 - Introduction to Abstract Mathematics
# Assignment 16 - Due Monday, February 25

**Problem 59:** Show that if $x \in \mathbb{Z}$, then $x^3$ can be written as $9k$, $9k+1$, or $9k+8$ for some $k \in \mathbb{Z}$.

**Problem 60:** Suppose $a, b, c \in \mathbb{Z}$ such that $a$ divides both $b$ and $c$. Show that $a$ divides $bx + cy$ for every $x, y \in \mathbb{Z}$.

(**Recall:** *For $x, y \in \mathbb{Z}$ we say that $x$ divides $y$ if there exists $k \in \mathbb{Z}$ such that $xk = y$.*)