Please write your solutions on a different piece of paper. Please refer to the course syllabus for a detailed explanation of how you should write homework solutions and how they will be graded.

Section 3.2

3.8 (3.6 in second edition) Prove that if $x$ is an odd integer, then $9x + 5$ is even.

3.10 (3.8 in second edition) Prove that if $a$ and $c$ are odd integers, then $ab + bc$ is even for every integer $b$.

Section 3.3

3.16 (3.12 in second edition) Let $x \in \mathbb{Z}$. Prove that if $7x + 5$ is odd, then $x$ is even.

3.21 (3.18 in second edition) Let $n \in \mathbb{Z}$. Prove that $(n + 1)^2 - 1$ is even if and only if $n$ is even.