Name $\qquad$ Solutions $\qquad$ Discrete I, Quiz 9

1) Solve $3 x=6 \bmod 9$.

Here note that 3 is not invertible mod 9. Hence we'll resort to brute force and try all the possible answers:

$$
\begin{gathered}
3 \cdot 0 \equiv 0 \not \equiv 6 \\
3 \cdot 1 \equiv 1 \not \equiv 6 \\
3 \cdot 2 \equiv 6 \\
3 \cdot 3 \equiv 0 \not \equiv 6 \\
3 \cdot 4 \equiv 3 \not \equiv 6 \\
3 \cdot 5 \equiv 6 \\
3 \cdot 6 \equiv 0 \not \equiv 6 \\
3 \cdot 7 \equiv 3 \not \equiv 6 \\
3 \cdot 8 \equiv 6
\end{gathered}
$$

From the above we see that there are three solutions: $x=2, x=5$, and $x=8$.

