CSCI 281, Assignment 05 – Sets

1. Determine each of the following.
   (a) (1 point) $\{x \in \mathbb{Z} \mid 0 < x, x^2 \leq 100\}$
   (b) (1 point) $|\{x \in \mathbb{Z} \mid 0 < x, x^2 \leq 100\}|$
   (c) (1 point) $\{x \in \mathbb{Z} \mid x > 10, x^2 \leq 100\}$
   (d) (1 point) $|\{x \in \mathbb{Z} \mid x > 10, x^2 \leq 100\}|$
   (e) (1 point) $|\mathscr{P}(A)|$, where A is the set from Part a.
2. (5 points) Give a counterexample to the statement $|A \cup B| = |A| + |B|$.