Section 1.3

Problem 3

a. Is $4 = \{4\}$?

b. How many elements are in the set $\{3, 4, 3, 5\}$?

c. How many elements are in the set $\{1, \{1\}, \{1, \{1\}\}\}$?

Problem 6

For any integer n, let $T_n = \{n, n^2\}$. How many elements are in each of T_2, T_{-3}, T_1, and T_0? Justify your answers.

Problem 7

Use the set-roster notation to indicate the elements in each of the following sets.

a. $S = \{n \in \mathbb{Z} \mid n = (-1)^k,$ for some integer k$\}$.

e. $W = \{s \in \mathbb{Z} \mid 1 < t < -3\}$

f. $X = \{u \in \mathbb{Z} \mid u \leq 4 \text{ or } u \geq 1\}$

Problem 9

c. Is $\{2\} \in \{1, 2\}$?

g. is $\{1\} \subseteq \{1, 2\}$?

Problem 10