CS 278 Lab 7

3.2.1 h) $\{2,4\} \in X$

false

i) $\{2,3\} \subseteq X$

false

j) $\{2,3\} \in X$

false

k) $|X| = 7$

false

3.2.2 b) $\{1,2\} = A$

$P(A) = \{\emptyset, \{1\}, \{2\}, \{1,2\}\}$

3.2.4 b) Let $A = \{1,2,3\}$. What is $\{X \in P(A) : 2 \in X\}$

$P(A) = \{\emptyset, \{1\}, \{2\}, \{3\}, \{1,2\}, \{1,3\}, \{2,3\}, \{1,2,3\}\}$

$X = \{\{2\}, \{1,2\}, \{2,3\}, \{1,2,3\}\}$

3.2.5 b) $\emptyset \subseteq P(x)$

true

d) $\{\emptyset\} \subset P(x)$

more information needed ... If $X = \emptyset$, then false because $P(x)$ only has $\emptyset$, otherwise true.

f) $|P(x)| = 0$

False, power set will always have at least $\emptyset$ in the set, so it is never empty

3.2.6 c) $P(\emptyset) = \{\emptyset\}$

$P(P(\emptyset)) = \{\emptyset, \{\emptyset\}\}$

$P(P(P(\emptyset))) = \{\emptyset, \{\emptyset\}, \{\{\emptyset\}\}\}$

$|P(P(P(\emptyset)))| = 3$