Assignment 4

Part 1

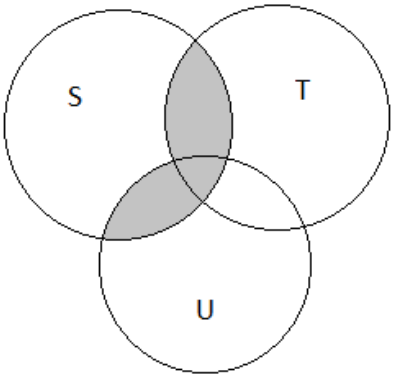
1.

a. $(S \cup V) = \{1, 2, 3, 4, 5, 6, 8\}$
$(S \cup V) \cap U = \{1, 2, 3, 4\}$

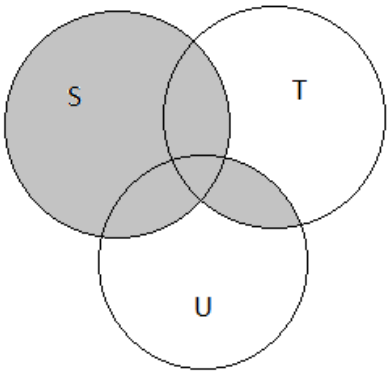
b. $(S \cap T) = \{3, 4, 5\}$
$(S \cap T) \cup U = \{1, 2, 3, 4, 5, 9\}$

2. $S \times T = \emptyset$

4.



a. $S \cap (T \cup U) = (S \cap T) \cup (S \cap U)$



b. $S \cup (T \cap U) = (S \cup T) \cap (S \cup U)$

5. $A \backslash B = \emptyset$
$A \backslash C = \emptyset$
$A \cup B = B$

10.

a. False (It should be $a \in S, or \ \{a\} \subset S$)
b. True (1 is an element of set T)
c. False ({b, 2} is a subset of U, so it should be $\{b, 2\} \subset U$)

Assignment 4

Part 2

Set A is defined as the set of all persons; a (which is professor Dubin) is a member of A; U is the set of all living things. A is the subset of U.

UML:

$A \subset U$

RDF:

$a \in A, A \subset U$

Part 3

Set A is defined as a set with only one element a (which is professor Dubin); M is defined as set of all males, and F is defined as set of all females. P is defined as the set of all persons.

$A = \{a\}$
$P = M \cup F$
$A \subset M$
So, $A \subset P$

So Professor Dubin is a subclass of person.