

1. Using these sets, answer the following questions:

$$U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$A = \{0, 2, 4, 6, 8\}$$

$$B = \{3, 4, 5, 6, 7, 8\}$$

$$C = \{0, 4, 5, 7, 9\}$$

$$D = \{1, 2, 3, 4, 8, 9\}$$

$$E = \{0, 2\}$$

$$F = \{1, 9\}$$

(a) $(A \cup D)^C = \{5, 7\}$

Note: $A \cup D = \{0, 1, 2, 3, 4, 6, 8, 9\}$

(b) $B \cap C = \{4, 5, 7\}$

(c) $\phi^C \cap F = F$ or $F = \{1, 9\}$

Note: $\phi^C = U$

(d) $(B \cup A) \cap D = \{2, 3, 4, 8\}$

$$B \cup A = \{0, 2, 3, 4, 5, 6, 7, 8\}$$

(e) False. $9 \subseteq C$ since 9 is a number not a set. The statement $9 \in C$ is true.

False. $F \subseteq B$ since the set B does not have the number 1 or 9.

False. $\{0, 2\} \in A$. the statements $\{0, 2\} \subseteq A$ is true. or $0, 2 \in A$ is also true