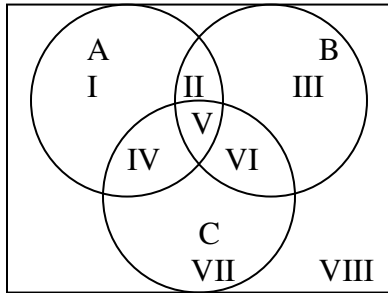


**Math 1313**  
**Homework 13**  
**Section 5.1**

**Use the following information to answer questions 1 – 3.**

Given the following Venn diagram, which region(s) make up:



1.  $(A \cap B) \cup C$

- a. IV, V, VI, VII, VIII
- b. I, IV, VII, VIII
- c. VII, VIII
- d. III, VI
- e. II, IV, V, VI, VII

2.  $(A^c \cap C^c)$

- a. I, II, III, IV, V, VI, VII
- b. IV, V, VI
- c. III, VIII
- d. II, V, VIII
- e. VIII

3.  $A^c \cap (B \cup C)$

- a. I, II, III, IV, VII, VIII
- b. III, V, VI, VII, VIII
- c. I, II, IV
- d. III, VI, VII
- e. I, II, III, IV, V, VII, VIII

**Use the following information to answer questions 4 – 6.**

Let  $U = \{0, 1, 2, 3, \dots, 9\}$ ,  $E = \{1, 3, 5, 7, 9\}$ ,  $F = \{0, 2, 4, 6, 7, 8\}$  and  $G = \{2, 3, 5, 7\}$ . Find each of the given sets.

4.  $G^c$

- a.  $\{0, 2, 4, 6, 8\}$
- b.  $\{0, 2, 4, 7\}$
- c.  $\{0, 1, 4, 6, 8, 9\}$
- d.  $\{1, 3, 5, 7, 9\}$
- e.  $\{0, 1, 3, 5, 8\}$

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5.  $F \cap E^c$

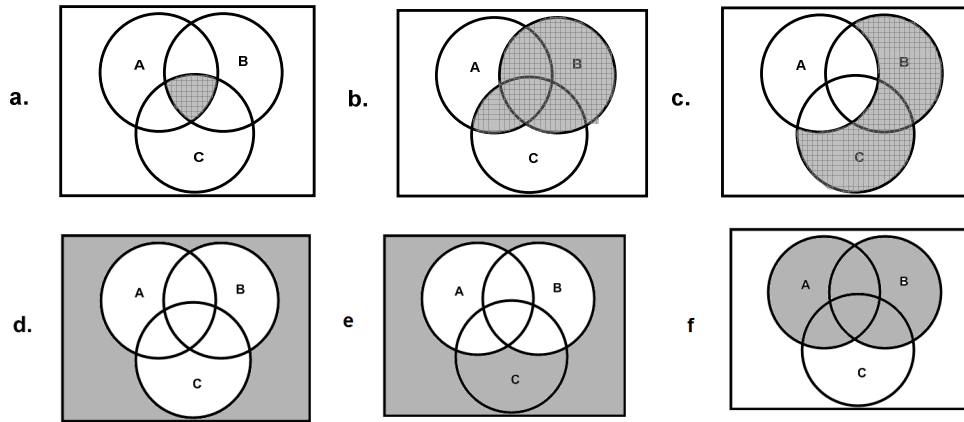
- a.  $\emptyset$
- b.  $\{0, 2, 4, 6, 8\}$
- c.  $\{7\}$
- d.  $\{1, 9\}$
- e.  $\{6, 8\}$

6.  $(F \cup E) \cap (G \cup E)$

- a.  $\{1, 2, 3, 5, 7, 9\}$
- b.  $\emptyset$
- c.  $\{0, 1, 2, 4, 6, 7, 8, 9\}$
- d.  $\{7\}$
- e.  $\{0, 1, 2, 3, 4, 5, 7, 9\}$

**Use the following information to answer questions 7 – 10.**

Match the following operations with their indicated shaded diagram.



7.  $A \cup B$

8.  $(A \cup B \cup C)^c$

9.  $(C \cup B) \cap A^c$

10.  $(B^c \cup C^c \cup A^c)^c$