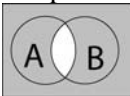


Exam 2 Practice Problems

Part II – Sets

1. Express the shaded region in set notation:



2. A class of math students can be grouped in the following sets:

$$A = \{x \mid x \text{ is a woman}\}$$

$$B = \{x \mid x \text{ has taken Economics}\}$$

Find the set of women who have not taken Economics in set builder notation

3. A store has sold 100 microwaves. 80 of the microwaves have turntables and 40 of them have programs. If 90 of them have programs or turntables, how many have only turntables?

4. A survey of two hundred students is done at a school cafeteria. Use the information given to fill in a Venn diagram:

55 students like pizza and burritos.

130 students did not like chicken.

30 students like all three items.

35 students like burritos but did not like chicken.

55 students like only pizza.

60 students like exactly 2 of these dishes.

15 students like chicken and pizza but not burritos.

5. Shade the region corresponding to

$$(a) \{x \mid x \notin A \text{ or } x \in B\} \quad (b) (A \cup B)^c \quad (c) (A \cap B^c) \cup C \quad (d) (B \cup C) \cap A^c$$

6. Define the following sets. Note that U is the universal set. Decide if each statement is true or false.

$$U = \{0, 1, 2, 3, 4, 5, 6, 7, 8\} \quad A = \{1, 2, 3\} \quad B = \{2, 4, 6\} \quad C = \{3, 5, 7\}$$

(a) B and C are disjoint

(b) $1 \subseteq A$

(c) $B \subset B$

(d) $\{3, 5\} \in C$

(e) $A \cap B = 2$

(f) $A \cup C = \{1, 2, 3, 3, 5, 7\}$