Probability and Venn Diagrams

For each question, use the statements to construct a 2 or 3 set Venn diagram, with the probabilities for all regions filled in.

Question 1

$P(A \cup B) = 0.6$

$P(A) = P(B)$

$P(A \cap B) = 0.3$

Question 2

A and B are mutually exclusive.

$P(A \cup B) = 0.8$

$P(A) = 3 \times P(B)$

Question 3

$P(A) = \frac{1}{2} P(B)$

$P(A \cap B) = P(A \cap B')$

$P(A' \cap B') = 0$

Question 4

$P(A) + P(B) + P(A' \cap B') = 1.5$

$P(B) - P(A) = 0.1$

$P(A \cup B) = 0.8$

Question 5

A and B are mutually exclusive.

A and C are mutually exclusive.

$P(A' \cap B' \cap C') = 0.2$

$P(A) = \frac{1}{3} \times P(B \cup C)$

$P(B) = P(C)$

$P(B) + P(C) - P(B \cup C) = 0.1$

Question 6

$B \subset A$

B and C are mutually exclusive.

$P(A) = 2 \times P(B)$

$P(A \cap C') = \frac{3}{4} \times P(A)$

$P(C) = \frac{1}{3}$

$P(A' \cap B' \cap C') = P(A \cap C)$

Question 7

$B \subset A,\ C \subset A$

B and C are mutually exclusive.

$P(A) - P(B) - P(C) = \frac{2}{15}$

$P(C) = P(A' \cap B' \cap C')$

$P(B) = \frac{7}{3} \times P(C)$

Question 8

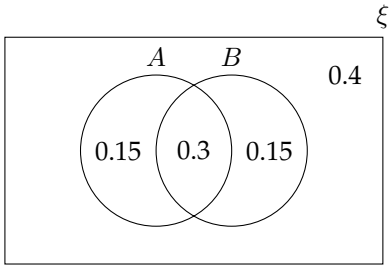
A, B, and C are all mutually exclusive.

$7 \times P(A) + 3 \times P(B) + P(C) = 3.4$

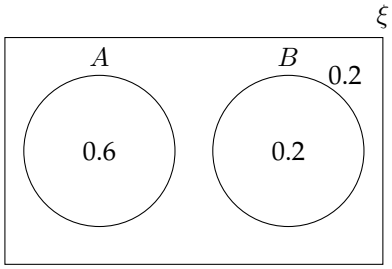
$4 \times P(A) - P(B) + 2 \times P(C) = 1$

$P(A) + 3 \times P(B) + 3 \times P(C) = 1.8$

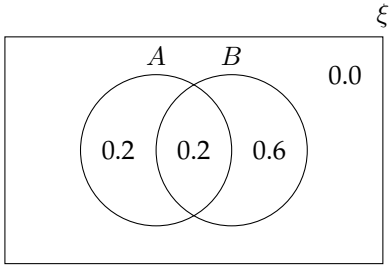
Question 1



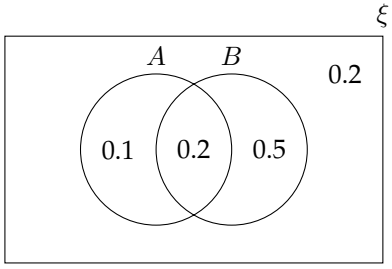
Question 2



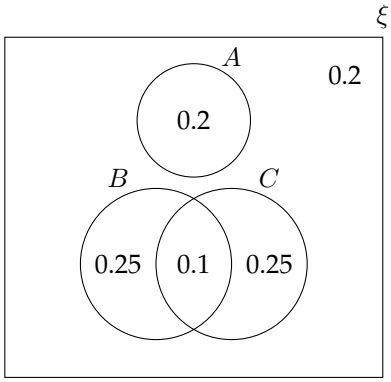
Question 3



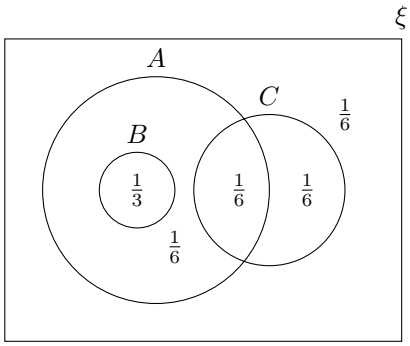
Question 4



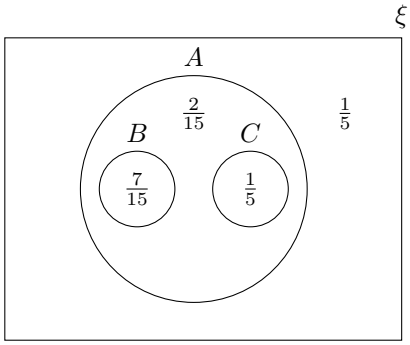
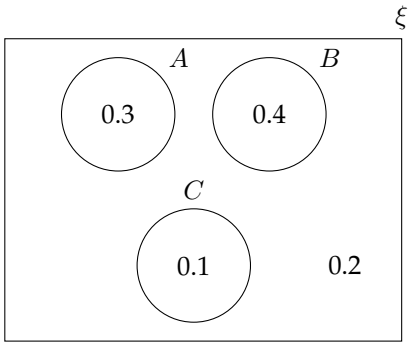
Question 5



Question 6



Question 7



Question 8