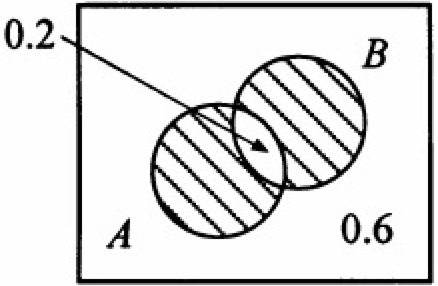
2.3.2 $P(A \text{ or } B \text{ but not both}) = P(A \cup B) - P(A \cap B) = P(A) + P(B) - P(A \cap B) - P(A \cap B)$

$$= 0.4 + 0.5 - 0.1 - 0.1 = 0.7$$

2.3.6



$P(A \text{ or } B \text{ but not both}) = 0.4 - 0.2 = 0.2$

2.3.12 Since A_1 and A_2 are mutually exclusive and cover the entire sample space, $p_1 + p_2 = 1$.

But $3p_1 - p_2 = \frac{1}{2}$, so $p_2 = \frac{5}{8}$.

2.3.14 The smallest value of $P[(A \cup B \cup C)^C]$ occurs when $P(A \cup B \cup C)$ is as large as possible. This, in turn, occurs when A, B, and C are mutually disjoint. The largest value for $P(A \cup B \cup C)$ is $P(A) + P(B) + P(C) = 0.2 + 0.1 + 0.3 = 0.6$. Thus, the smallest value for $P[(A \cup B \cup C)^C]$ is 0.4.