3. Populations \( P_1 \) and \( P_2 \) are normally distributed and have identical means. However, the standard deviation of \( P_1 \) is twice the standard deviation of \( P_2 \).

Chapter 2 Multiple Choice Questions

What can be said about the percentage of observations falling within two standard deviations of the mean for each population?

(A) The percentage for \( P_1 \) is twice the percentage for \( P_2 \).

(B) The percentage for \( P_1 \) is greater, but not twice as great, as the percentage for \( P_2 \).

(C) The percentage for \( P_2 \) is twice the percentage for \( P_1 \).

(D) The percentage for \( P_2 \) is greater, but not twice as great, as the percentage for \( P_1 \).

2. Which of the following are true statements?

(I) The area under a normal curve is always equal to 1, no matter what the mean and standard deviation are.

(II) The smaller the standard deviation of a normal curve, the higher and narrower the graph.

(III) Normal curves with different means are centered around different numbers.

(A) I and II

(B) I and III

(C) II and III

(D) I, II, and III

(E) None of the above gives the complete set of true responses.

5. Which of the following are true statements?

(I) Normal curves with different means are centered around different numbers.

(II) The smaller the standard deviation of a normal curve, the higher and narrower the graph.

(III) Virtually all the area under a normal curve is within three standard deviations of the mean, no matter what the particular mean and standard deviation are.

(A) I and II

(B) I and III

(C) II and III

(D) I, II, and III

(E) None of the above gives the complete set of true responses.