Researchers wanted to determine if carpeted rooms contained more bacteria than uncarpeted rooms. To determine the amount of bacteria in a room, researchers pumped the air from the room over a Petri dish at a rate of 1 cubic foot per minute for eight carpeted rooms and eight uncarpeted rooms. Colonies of bacteria were allowed to form in the 16 Petri dishes. The results were collected. A normal probability plot and box plot indicate the data are approximately normally distributed with no outliers. The data is as follows in bacteria per cubic foot:

Carpeted: 11.8, 10.8, 8.2, 10.1, 7.1, 14.6, 13.0, 14.0

Uncarpeted: 12.1, 12.0, 8.3, 11.1, 3.8, 10.1, 7.2, 13.7

Determine using the appropriate hypothesis testing technique if carpeted rooms have more bacteria than uncarpeted rooms at the .05 level of significance.