For each of these questions, answer these questions with has much detail (including formulas), and managerial insight as possible. e.g. How capable is the process of achieving the customer specifications? Is the process capable of meeting the minimum specification? Not exceeding the upper tolerance? Calculate Cp, CPU, CPL, and Cpk and interpret!

1. We make an automatic oven timer that we have developed. Our tests indicate that it turns off on average after 11.75 minutes with a standard deviation of .25 minutes. Our customer wants the timer to turn off in the range of 11 to 13 minutes.
2. We fill pints of beers with a new automatic tap. The customer has specified 16 ounces +/- 2 oz per glass. In extensive testing (and drinking) we find that our tap fills an average of 15 ounces with a standard deviation of a half ounce.