

Probability Distribution Plot

An engineer for a soda bottling facility collects data on soda can fill weights. The engineer determines that the fill weights follow a normal distribution with a mean of 12 ounces and a standard deviation of 0.25 ounces. The engineer analyzes the distribution of the data to determine the probability that a randomly chosen can of soda has a fill weight that is between 11.5 and 12.5 ounces.

1. Choose **Graph > Probability Distribution Plot**.
2. Select **View Probability**, then click **OK**.
3. From **Distribution**, select **Normal**.
4. In **Mean**, enter *12*.
5. In **Standard deviation**, enter *0.25*.
6. Click the **Shaded Area** tab.
7. In **Define Shaded Area By**, select **X value**.
8. Click the **Middle** icon. This option shows the probability that is between two x-values.
9. In **X value 1**, enter *11.5*. In **X value 2**, enter *12.5*.
10. Click **OK**.

Interpreting the results

If the population of fill weights follows a normal distribution and has a mean of 12 and a standard deviation of 0.25, then the probability that a randomly chosen can of soda has a fill weight that is between 11.5 and 12.5 ounces is 0.9545.

