1. **Problem**
   The daily expenses of summer tourists in Vienna are analyzed. A survey with 71 tourists is conducted. This shows that the tourists spend on average 130 EUR. The sample variance s^2_{n-1} is equal to 83.2.

   Determine a 95% confidence interval for the average daily expenses (in EUR) of a tourist.

   (a) What is the lower confidence bound?

   (b) What is the upper confidence bound?

   Solution
   The 95% confidence interval for the average expenses μ is given by:

$$\begin{aligned} & \left[\bar{y} - 1.96\sqrt{\frac{s^2_{n-1}}{n}},\ \bar{y} + 1.96\sqrt{\frac{s^2_{n-1}}{n}}\right] \\ = & \left[130 - 1.96\sqrt{\frac{83.2}{71}},\ 130 + 1.96\sqrt{\frac{83.2}{71}}\right] \\ = & \qquad [127.878,\ 132.122]\,. \end{aligned}$$

   (a) The lower confidence bound is 127.878.

   (b) The upper confidence bound is 132.122.