1. **Problem**
   The daily expenses of summer tourists in Vienna are analyzed. A survey with 132 tourists is conducted. This shows that the tourists spend on average 168.8 EUR. The sample variance s_{n-1}^2 is equal to 230.6.

   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:

$$
\begin{aligned}
& \left[\bar{y} - 1.96\sqrt{\frac{s_{n-1}^2}{n}},\ \bar{y} + 1.96\sqrt{\frac{s_{n-1}^2}{n}} \right] \\
=\ & \left[168.8 - 1.96\sqrt{\frac{230.6}{132}},\ 168.8 + 1.96\sqrt{\frac{230.6}{132}} \right] \\
=\ & [166.209,\ 171.391].
\end{aligned}
$$

   (a) The lower confidence bound is 166.209.

   (b) The upper confidence bound is 171.391.