1. One characteristic of a car’s storage console that is checked by the manufacturer is the time in seconds that it takes for the lower storage compartment door to open completely. A random sample of size \( n = 5 \) yielded the following times:

\[
1.1 \quad 0.9 \quad 1.4 \quad 1.1 \quad 1.0
\]

- Find the sample mean \( \bar{x} \).
- Find the sample variance \( s^2 \).
- Find the sample standard deviation \( s \).

2. A leakage test was conducted to determine the effectiveness of a seal designed to keep the inside of a plug airtight. An air needle was inserted into the plug, which was then placed underwater. Next, the pressure was increased until leakage was observed. The magnitude of this pressure in psi was recorded for 10 trials:

\[
3.1 \quad 3.5 \quad 3.3 \quad 3.7 \quad 4.5 \quad 4.2 \quad 2.8 \quad 3.9 \quad 3.5 \quad 3.3
\]

Find the sample mean and sample standard deviation for these 10 measurements.

3. There are 64 observations that are a sample of daily weekday afternoon lead concentrations (in micrograms per cubic meter, \( \text{ug/m}^3 \)). The following data were recorded at an air-monitoring station near the San Diego Freeway in Los Angeles during the fall of 1976:

\[
\begin{array}{cccccccccc}
6.7 & 5.4 & 5.2 & 6.0 & 8.7 & 6.0 & 6.4 & 8.3 & 5.3 & 5.9 & 7.6 \\
5.0 & 6.9 & 6.8 & 4.9 & 6.3 & 5.0 & 6.0 & 7.2 & 8.0 & 8.1 & 7.2 \\
10.9 & 9.2 & 8.6 & 6.2 & 6.1 & 6.5 & 7.8 & 6.2 & 8.5 & 6.4 & 8.1 \\
2.1 & 6.1 & 6.5 & 7.9 & 14.1 & 9.5 & 10.6 & 8.4 & 8.3 & 5.9 & 6.0 \\
6.4 & 3.9 & 9.9 & 7.6 & 6.8 & 8.6 & 8.5 & 11.2 & 7.0 & 7.1 & 6.0 \\
9.0 & 10.1 & 8.0 & 6.8 & 7.3 & 9.7 & 9.3 & 3.2 & 6.4
\end{array}
\]

- Display the data in the form of a histogram. Is this distribution symmetric?
- Calculate the sample mean and sample standard deviation. How many observations lie within one standard deviation of the mean? How many lie within two standard deviations of the mean?