1-6 Lesson Master

SKILLS Objective A
1. A table of the countries with the largest proven crude oil reserves is at the right. Calculate
   a. the median. ______________________
   b. the mean. ______________________
   c. the sample variance. ______________________
   d. the sample standard deviation. ______________________

2. Consider the following data set {92, 103, 88, 96, 109, 77, 86, 92, 95, 90, 105}. Calculate
   a. a sample variance. ____________
   b. a population variance. ____________
   c. a sample standard deviation. ____________
   d. a population standard deviation. ____________

PROPERTIES Objective D
3. Both distributions at the right have the same mean. Without calculating, determine which has the greater standard deviation. Justify your answer.

USES Objective E
4. In a data set, suppose you calculate a mean and a standard deviation, and you identify all outliers using the \( 1.5 \times \text{IQR} \) criterion. If you remove the outliers and calculate the new mean, and standard deviation, which of these statistics is sure to increase and which to decrease?

5. Suppose the mean height of girls in one class is 63 inches with a standard deviation of 2.3 inches. The mean height of boys in another class is 65 inches with a standard deviation of 2.1 inches. Which class has more variability in height? Justify your answer.

Proven Crude Oil Reserves (million barrels, 2007)

<table>
<thead>
<tr>
<th>Country</th>
<th>Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venezuela</td>
<td>99,377</td>
</tr>
<tr>
<td>USSR (former)</td>
<td>128,254</td>
</tr>
<tr>
<td>Iran</td>
<td>136,150</td>
</tr>
<tr>
<td>Iraq</td>
<td>115,000</td>
</tr>
<tr>
<td>Kuwait</td>
<td>101,500</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>264,209</td>
</tr>
<tr>
<td>Libya</td>
<td>43,663</td>
</tr>
<tr>
<td>UAE</td>
<td>97,800</td>
</tr>
<tr>
<td>Nigeria</td>
<td>36,220</td>
</tr>
<tr>
<td>United States</td>
<td>20,972</td>
</tr>
</tbody>
</table>