



**Example 3 Identify Outliers**

Identify any outliers in the following set of data.

Stem	Leaf
11	[1 2 2 4 <span style="border: 1px solid black; padding: 0 2px;">4</span> 4 5 6
12	2] [3 4 5 5 <span style="border: 1px solid black; padding: 0 2px;">6</span> 7
13	1 2
14	9]

11 | 1 = 111

**Step 1 Find the quartiles.**

The brackets group the values in the lower half and the values in the upper half. The boxes are used to find the lower quartile and the upper quartile.

$$Q_1 = 114, Q_3 = 126$$

**Step 2 Find the interquartile range.**

The interquartile range is  $126 - 114$  or 12.

**Step 3 Find the interquartile outliers.**

An outlier must be  $1.5(12)$  less than the lower quartile 114 or  $1.5(12)$  greater than the upper quartile 126.

$$114 - 1.5(12) = 96 \quad 126 + 1.5(12) = 144$$

There are no values less than 96. Since  $149 > 144$ , 149 is the only outlier.