Stem-and-Leaf Plots, Range of a Data Set

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Aneesa is trying to raise money for a local charity. She has 7 people in her family and she assigns each one an area to raise money. After 8 days of raising money, Aneesa counts the money that each person has raised. She calculates the following amounts: 78, 75, 52, 67, 78, 70, 86. She organizes the data on a stem-and-leaf plot.

Using the stem-and-leaf plot, what is the range of money that was raised by her family members?

In this concept, you will learn how to use a stem-and-leaf plot to determine the range of a set of data.

Using Stem-and-Leaf Plots to Find the Range of a Set of Data

You can use a stem-and-leaf plot to figure out the range of a set of data. The range is the difference between the maximum score and the minimum score.

Let’s look at an example.
The smallest number in the stem-and-leaf plot is 22. You can see that by looking at the first stem and the first leaf. The greatest number is the last stem and the last leaf on the chart. In this case, the largest number is 55. To find the range, subtract the smallest number from the largest number. This difference will give you the range.

55 - 22 = 33

The range is 33 for this set of data.

**Examples**

**Example 1**

Earlier, you were given a problem about Aneesa and her family.

7 people in her family raised money for a charity organization. She made a stem-and-leaf plot to organize the data and she wants to calculate the range of money that was raised by her family members. Can you use the plot to find the range of money that Aneesa and her family raised?

First, locate the smallest value.

52

Next, locate the largest value.

86

Then, subtract the smallest value from the largest value.

86 - 52 = 34

The range is 34. The range of money raised by her family members is $34.

**Example 2**

What is the range of this data set?
First, locate the smallest value.
33
Next, locate the largest value.
68
Then, subtract the smallest value from the largest value.
68 - 33 = 35
The range is 35.

**Example 3**

Use the following stem-and-leaf plot to answer the question.

```
3 | 3 4 6
4 | 0 5
5 |   
6 | 2 7 8
```

What is the range for this data set?
First, locate the smallest value.
33
Next, locate the largest value.
68
Then, subtract the smallest value from the largest value.
68 - 33 = 35
The range is 35.

**Example 4**

Use the stem-and-leaf plot in example 3 to answer the question.

```
1 | 2 3 4
2 | 3 4 5 6 7
3 | 0 1 2
4 | 2 4 5 6 7
```

What is the range for this data set?
First, locate the smallest value.
12
Next, locate the largest value.
47
Then, subtract the smallest value from the largest value.
47 - 12 = 35
The range is 35.
First, list the intervals.
12-14, 23-27, 30-32, 42-47

Next, subtract the smallest number in the smallest interval from the largest number in the smallest interval.
14 - 12 = 2

Then, write the range for the smallest interval.
2
The answer is 2. The smallest interval has a range of 2.

**Example 5**

Use the stem-and-leaf plot in example 3 to answer the question.

What is the range of the greatest interval?

First, list the intervals.
12-14, 23-27, 30-32, 42-47

Next, subtract the smallest number in the greatest interval from the largest number in the greatest interval.
47 - 42 = 5

Then, write the range for the smallest interval.
5
The answer is 5. The greatest interval has a range of 5.

**Review**

Use each stem-and-leaf plot to answer the following questions.

| Table 1.1: |
|---|---|
| **Stem** | **Leaf** |
| 6 | 8 |
| 7 | 5 7 9 |
| 8 | 0 2 |
| 9 | 2 6 6 7 |

1. What is the smallest value in the plot?
2. What is the greatest value in the plot?
3. What is the range of the data?

| Table 1.2: |
|---|---|
| **Stem** | **Leaf** |
| 0 | 8 |
| 1 | 2 7 8 9 |
| 2 | 2 3 |
| 3 | 1 5 |
| 4 | 0 |
4. What is the smallest value in the data set?
5. What is the greatest value in the data set?
6. What is the range of the data?
7. Name the first interval.
8. Name the second interval.
9. Name the third interval.
10. Name the fourth interval.
11. Which interval has the greatest number of values in it?
12. Which interval has the smallest number of values in it?
13. Because the 4 stem has a zero in it, does that mean that there aren’t any values in it?
14. True or false. You can create a stem-and-leaf plot with a range in the hundreds.
15. True or false. You can create a stem-and-leaf plot without using intervals.

**Review (Answers)**

To see the Review answers, open this [PDF file](#) and look for section 3.22.

**Resources**

![Stem-and-Leaf Plot Image]

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**MEDIA**

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URL: [http://www.ck12.org/flx/render/embeddedobject/167951](http://www.ck12.org/flx/render/embeddedobject/167951)