Line Plots: Fraction Measurements

Organizing and Analyzing Data

M4 L1

Important Terms

Line Plot & Data Set	Frequency
Line Plots show data on a number line with an 'x' (or other mark) for every value in the **data set** (a collection of related values).	How frequently a value appears in the data. Count the _X_ ... the value with the most _X_ has the highest frequency.

Highest Value	Lowest Value
The greatest value on the line plot with _an X above it_	The lowest value on the line plot with _an X above it_

Difference	Total
Subtract the lowest value from the highest value.	The total of ALL values in the whole data set. Add the **value** of EVERY _X_ on the line plot.

Line Plots: Fraction Measurements
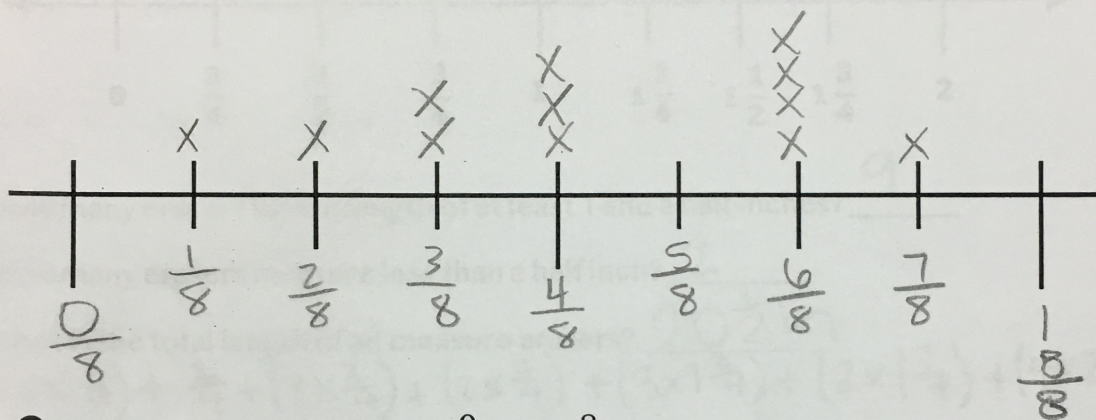
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___line Plots___ shows data on a number line with an 'x' (or other mark) to show ___frequency___ of the values represented.

ORGANIZE DATA

1. Create a **line plot** for the following data measured in $\frac{1}{8}$ inches.

* notice: none of the values are greater than ___1___

Line plot labeled: $\frac{0}{8}$, $\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, $\frac{7}{8}$, $\frac{8}{8}$

2. Label the line plot from $\frac{0}{8}$ to $\frac{8}{8}$.

3. Place one "X" above the line plot to represent each of the following values:

$$\frac{7}{8}, \frac{4}{8}, \frac{1}{4}, \frac{1}{2}, \frac{3}{8}, \frac{3}{8}, \frac{3}{4}, \frac{4}{8}, \frac{1}{8}, \frac{6}{8}, \frac{6}{8}, \frac{3}{4}$$

4. Analyze the completed Line Plot. What are some of things you notice?

Highest Frequency: $\frac{6}{8}$

Highest Value: $\frac{7}{8}$

Lowest Value: $\frac{1}{8}$

Total of All Values: $6\frac{1}{2}$

$\frac{1}{8} + \frac{2}{8} + (2 \times \frac{3}{8}) + (3 \times \frac{4}{8}) + (4 \times \frac{6}{8}) + \frac{7}{8}$

$\frac{3}{8} + \frac{6}{8} + \frac{12}{8} + 2\frac{4}{8} + \frac{7}{8} = \frac{52}{8} = 6\frac{4}{8} = 6\frac{1}{2}$

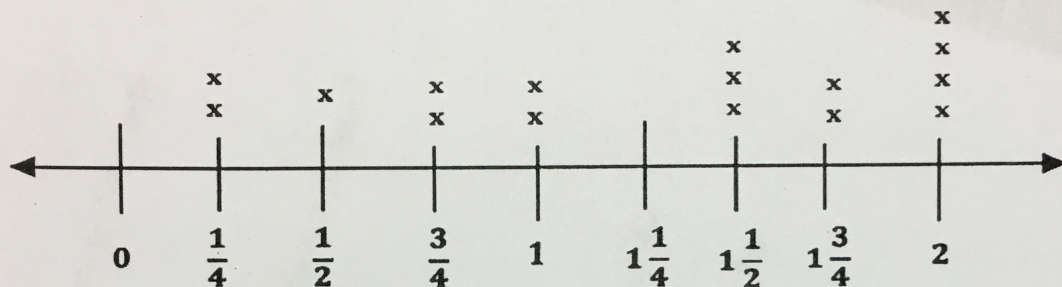Difference: $\frac{7}{8} - \frac{1}{8} = \frac{6}{8} = \boxed{\frac{3}{4}}$

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ANALYZE DATA

The following line plot represents the lengths of students' erasers as measured by a classmate. Analyze the plot answer the questions that follow.

1. How many erasers have a length of at least 1 and a half inches? __9__

2. How many erasers measure less than a half inch? __2__

3. What is the total length of all measure erasers? $20\frac{1}{2}$ in

$$(2\times\tfrac{1}{4})+ \tfrac{2}{4}+(2\times\tfrac{3}{4})+ (2\times\tfrac{4}{4}) +(3\times 1\tfrac{2}{4})+ (2\times 1\tfrac{3}{4})+(4\times 2)$$

$$\tfrac{2}{4}+\tfrac{2}{4}+ \tfrac{6}{4}+ \tfrac{8}{4}+ (3\times \tfrac{6}{4}) +(2\times\tfrac{7}{4})+ 8$$

$$\tfrac{18}{4} + \tfrac{18}{4}+ \tfrac{14}{4} +8$$

$$\tfrac{50}{4}+8 =12\tfrac{2}{4}+ 8= \boxed{20\tfrac{1}{2}}$$

$2-\tfrac{1}{4}=1\tfrac{4}{4}- \tfrac{1}{4}$

$=\boxed{1\tfrac{3}{4}}$

4. What is the difference between the shortest and longest erasers? _____

5. Which measurement appears most **frequently**? __2 in__

6. How many 1/4 inch erasers would it take to equal the length of a 2-inch eraser?

8 one-fourth inch erasers