Measurement Data and Line Plots

Spot mistakes, reason, and work backward

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

A line plot puts one X above the measured length for each object. From one whole-inch tick to the next, count 4 equal steps. Each step is $\frac{1}{4}$ inch. When several objects have the same length, stack their X marks.

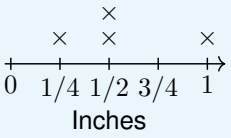
Worked example

Plot these lengths in inches, using one X for each object: $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{2}$, 1.

1. Sort the lengths into counts: $\frac{1}{4}$: 1 X; $\frac{1}{2}$: 2 X; 1: 1 X.

2. The counts add to $1+2+1=4$, so plot 4 X marks in all.

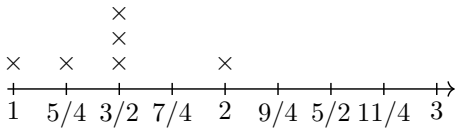
Answer: $\frac{1}{4}$: 1 X; $\frac{1}{2}$: 2 X; 1: 1 X.



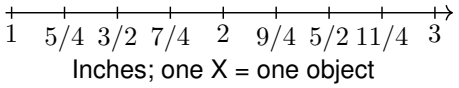
Practice Problems

Show your thinking.

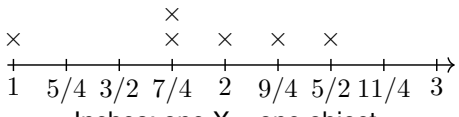
1. A student counts one stack at $\frac{3}{2}$ inches as one object. Correct the count at that length.



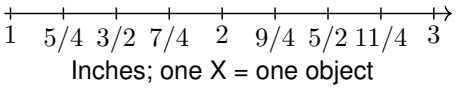
2. A class measured 7 objects. 4 are not $\frac{7}{4}$ inches long. How many have that length? Show the count with X marks.



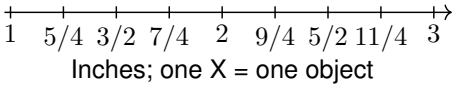
3. How much longer is the longest object than the shortest? Use the quarter-inch intervals.



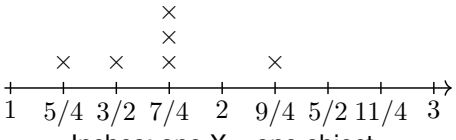
4. A class measured 7 objects. 4 are not 2 inches long. How many have that length? Show the count with X marks.



5. Plot these lengths in inches, using one X for each object: 1, 1, $\frac{5}{4}$, $\frac{3}{2}$, 2, 2.



6. A student counts one stack at $\frac{7}{4}$ inches as one object. Correct the count at that length.



Answer Key

1. 3 objects.
2. 3 objects.
3. $\frac{3}{2}$ inches.
4. 3 objects.
5. 1: 2 X; $\frac{5}{4}$: 1 X; $\frac{3}{2}$: 1 X; 2: 2 X.
6. 3 objects.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The key says one X is one object; the stack has 3 X marks.

2. Each X is separate, so the count is 3, not 1; the length remains $\frac{3}{2}$ inches.

Problem 2

1. Subtract the other lengths from the total: $7 - 4 = 3$.

2. Check: $4 + 3 = 7$ objects. Draw 3 X marks over $\frac{7}{4}$.

Problem 3

1. The smallest and largest plotted lengths are $\frac{4}{4}$ and $\frac{10}{4}$ inches when written in quarters.

2. There are $10 - 4 = 6$ quarter-inch steps between them: $6 \times \frac{1}{4} = \frac{3}{2}$ inches.

Problem 4

1. Subtract the other lengths from the total: $7 - 4 = 3$.

2. Check: $4 + 3 = 7$ objects. Draw 3 X marks over 2.

Problem 5

1. Sort the lengths into counts: 1: 2 X; $\frac{5}{4}$: 1 X; $\frac{3}{2}$: 1 X; 2: 2 X.

2. The counts add to $2 + 1 + 1 + 2 = 6$, so plot 6 X marks in all.

Problem 6

1. The key says one X is one object; the stack has 3 X marks.

2. Each X is separate, so the count is 3, not 1; the length remains $\frac{7}{4}$ inches.

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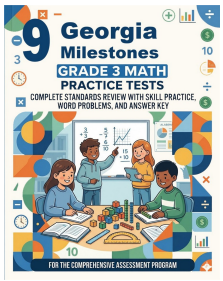

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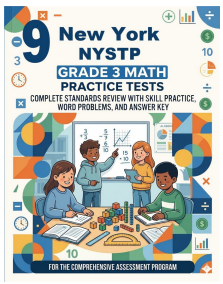

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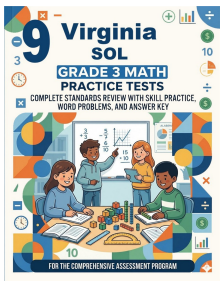

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