Line Plots with Fractional Data

Line Plots with Fractional Data: Find, Fix, and Work Backward

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

QUICK REVIEW

A line plot places one mark over a number-line tick for each measurement. For $\frac{1}{2}$, $\frac{1}{2}$, $\frac{3}{4}$ cm, put two marks over $\frac{1}{2}$ and one over $\frac{3}{4}$. Equal tick spacing represents equal fractional differences; the total mark count is 3.

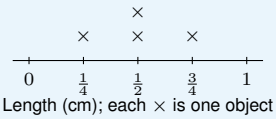
Worked example

Use the line plot to find the total number of objects and the number of objects of length $\frac{1}{2}$ cm.

1. Count marks at each occupied tick: $\frac{1}{4}$: 1, $\frac{1}{2}$: 2, $\frac{3}{4}$: 1.

2. Object count: $1 + 2 + 1 = 4$.

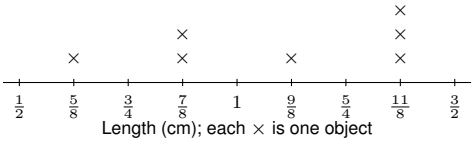
Answer: 4 objects; 2 at $\frac{1}{2}$ cm.



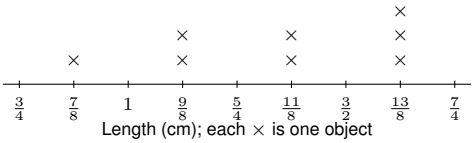
Practice Problems

Show your thinking.

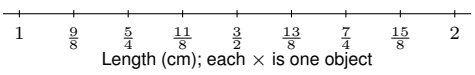
1. One mark is missing from this plot. Use the length data in cm, $\frac{5}{8}, \frac{7}{8}, \frac{7}{8}, \frac{9}{8}, \frac{9}{8}, \frac{11}{8}, \frac{11}{8}, \frac{11}{8}$, to find and add the missing mark. Then find the corrected total length.



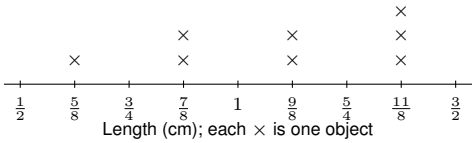
2. A student counts 9 objects in this plot. Find the correct count and explain the error using the counts at each tick.



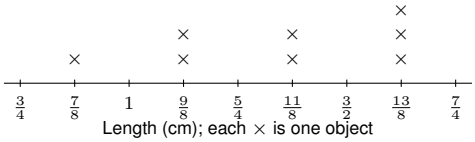
3. Make a line plot of these lengths in centimeters: $\frac{9}{8}, \frac{11}{8}, \frac{11}{8}, \frac{13}{8}, \frac{13}{8}, \frac{15}{8}, \frac{15}{8}, \frac{15}{8}$. Use one × per object on the blank axis.



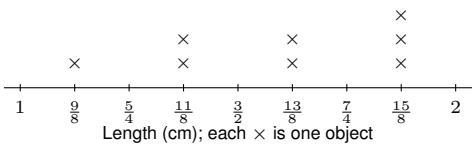
4. Use the line plot to find the total number of objects and the number of objects of length $\frac{9}{8}$ cm.



5. Which length or lengths occur most often? How many objects have each of those lengths?



6. Convert the line plot to a two-column table of lengths and frequencies. Include every occupied length and verify the table total.



Answer Key

1. Add one mark at $\frac{9}{8}$ cm; total $\frac{35}{4}$ cm.
2. 8 objects, not 9.
3. Place $\frac{9}{8}$: 1, $\frac{11}{8}$: 2, $\frac{13}{8}$: 2, $\frac{15}{8}$: 3 marks at the respective lengths.
4. 8 objects; 2 at $\frac{9}{8}$ cm.
5. $\frac{13}{8}$ cm; 3 objects at each.
6. $\frac{9}{8}$: 1, $\frac{11}{8}$: 2, $\frac{13}{8}$: 2, $\frac{15}{8}$: 3; total 8 objects.

Step-by-Step Solutions

Follow each calculation, then check your own work.

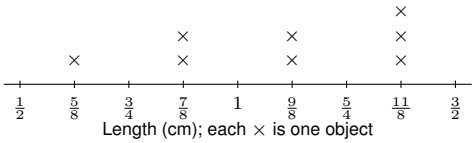
Problem 1

1. The data list 2 lengths of $\frac{9}{8}$ cm, but the given plot has 1. Add one mark there.

2. Count marks at each occupied tick: $\frac{5}{8}$: 1, $\frac{7}{8}$: 2, $\frac{9}{8}$: 2, $\frac{11}{8}$: 3.

3. Object count: $1 + 2 + 2 + 3 = 8$.

4. Add measured lengths, not just marks: $1 \times \frac{5}{8} + 2 \times \frac{7}{8} + 2 \times \frac{9}{8} + 3 \times \frac{11}{8} = \frac{35}{4}$ cm.



Length (cm); each × is one object

Problem 2

1. Count marks at each occupied tick: $\frac{7}{8}$: 1, $\frac{9}{8}$: 2, $\frac{11}{8}$: 2, $\frac{13}{8}$: 3.

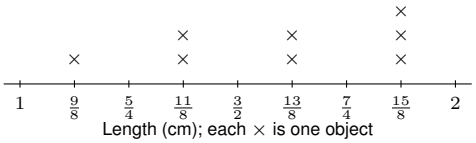
2. Object count: $1 + 2 + 2 + 3 = 8$.

Problem 3

1. Count marks at each occupied tick: $\frac{9}{8}$: 1, $\frac{11}{8}$: 2, $\frac{13}{8}$: 2, $\frac{15}{8}$: 3.

2. Object count: $1 + 2 + 2 + 3 = 8$.

3. Place the marks above their length ticks, not at heights equal to their lengths. The plot contains 8 marks.



Length (cm); each × is one object

Problem 4

1. Count marks at each occupied tick: $\frac{5}{8}$: 1, $\frac{7}{8}$: 2, $\frac{9}{8}$: 2, $\frac{11}{8}$: 3.

2. Object count: $1 + 2 + 2 + 3 = 8$.

Problem 5

1. Count marks at each occupied tick: $\frac{7}{8}$: 1, $\frac{9}{8}$: 2, $\frac{11}{8}$: 2, $\frac{13}{8}$: 3.

2. Object count: $1 + 2 + 2 + 3 = 8$.

3. The largest frequency is 3, attained at $\frac{13}{8}$ cm.

Problem 6

1. Count marks at each occupied tick: $\frac{9}{8}$: 1, $\frac{11}{8}$: 2, $\frac{13}{8}$: 2, $\frac{15}{8}$: 3.

2. Object count: $1 + 2 + 2 + 3 = 8$.

3. Pair each occupied length with its frequency.

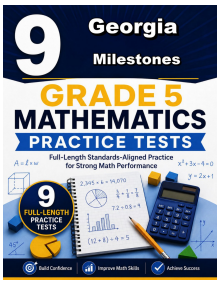
Length (cm)	Frequency
$\frac{9}{8}$	1
$\frac{11}{8}$	2
$\frac{13}{8}$	2
$\frac{15}{8}$	3

TESTINAR

Keep Building Grade 5 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 5 books



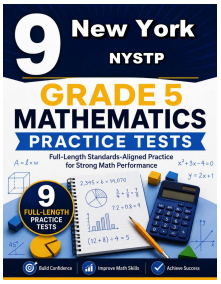
GEORGIA MILESTONES

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



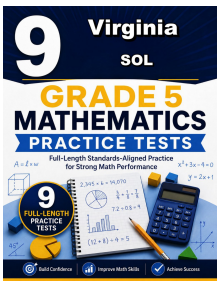
NEW YORK NYSTP

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



VIRGINIA SOL

9 Full-Length Math Practice Tests

Build Grade 5 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 5 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/5