

Plot It Out

Read measurement data, then add, compare, and share fractions.

GRADE 5 • 5.MD.B.2

CCSS.Math.Content.5.MD.B.2 "Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example..."

NAME _____

DATE _____

READ THE XS

Each X on a line plot stands for one measurement. Count the Xs at each fraction, then add, subtract, or divide the measurements to solve the question. Use fractions with the same denominator when you can.

WORKED EXAMPLE

Four jars hold $\frac{1}{8}$ L, $\frac{3}{8}$ L, $\frac{3}{8}$ L, and $\frac{5}{8}$ L. If the liquid is shared equally among the 4 jars, how much will each jar hold?

1. Add the amounts: $\frac{1}{8} + \frac{3}{8} + \frac{3}{8} + \frac{5}{8} = \frac{12}{8}$.
2. Simplify: $\frac{12}{8} = 1 \frac{1}{2}$.
3. Divide equally: $\frac{12}{8} \div 4 = \frac{3}{8}$.

Answer: Each jar will hold $\frac{3}{8}$ L.

PRACTICE 6 problems

- 1** Make a line plot for these ribbon lengths: $\frac{1}{4}$ yd, $\frac{1}{2}$ yd, $\frac{1}{2}$ yd, $\frac{3}{4}$ yd. Which length has the most Xs?

ANSWER _____

- 2** This line plot shows plant heights. $\frac{1}{4}$ ft: X, $\frac{1}{2}$ ft: XX, $\frac{3}{4}$ ft: X, 1 ft: X. How many plants were measured?

ANSWER _____

- 3** This line plot shows amounts of paint used. $\frac{1}{4}$ cup: XX, $\frac{1}{2}$ cup: X, $\frac{3}{4}$ cup: XX. What is the total amount of paint used?

ANSWER _____

- 4** This line plot shows jump-rope times. $\frac{1}{4}$ minute: X, $\frac{1}{2}$ minute: XXX, $\frac{3}{4}$ minute: X. What is the difference between the greatest and least times?

ANSWER _____

- 5** Four bottles are shown on a line plot: $\frac{1}{4}$ L, $\frac{1}{2}$ L, $\frac{1}{2}$ L, and $\frac{3}{4}$ L. The liquid is poured together and shared equally among 4 bottles. How much liquid goes in each bottle?

ANSWER _____

- 6** This line plot shows the lengths of five paper strips. $\frac{1}{4}$ ft: X, $\frac{1}{2}$ ft: XX, $\frac{3}{4}$ ft: XX. What fraction of the strips are $\frac{3}{4}$ ft long?

ANSWER _____

APPLY IT Show your work

- 1** A game design club has four identical battery packs. A line plot shows the charge in each pack: $\frac{2}{8}$ full: X, $\frac{4}{8}$ full: XX, $\frac{6}{8}$ full: X. The students combine the charge and divide it equally among the 4 packs. What fraction of a full charge will each pack have?

WORK SPACE

ANSWER _____

- 2** A music club times five short sound effects for a video project. A line plot shows the lengths: $\frac{2}{8}$ second: X, $\frac{4}{8}$ second: X, $\frac{6}{8}$ second: XX, $\frac{7}{8}$ second: X. What is the total length of all five sound effects?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A line plot shows amounts of juice in six cups: $\frac{2}{8}$ cup: X, $\frac{4}{8}$ cup: XX, $\frac{6}{8}$ cup: XX, $\frac{8}{8}$ cup: X. The cup with $\frac{8}{8}$ cup is removed. The juice in the remaining five cups is shared equally among those five cups. How much juice will each cup have? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Make a line plot for these ribbon lengths: $\frac{1}{4}$ yd, $\frac{1}{2}$ yd, $\frac{1}{2}$ yd, $\frac{3}{4}$ yd. Which length has the most Xs?	$\frac{1}{2}$ yd
2	This line plot shows plant heights. $\frac{1}{4}$ ft: X, $\frac{1}{2}$ ft: XX, $\frac{3}{4}$ ft: X, 1 ft: X. How many plants were measured?	5 plants
3	This line plot shows amounts of paint used. $\frac{1}{4}$ cup: XX, $\frac{1}{2}$ cup: X, $\frac{3}{4}$ cup: XX. What is the total amount of paint used?	$2\frac{1}{2}$ cups
4	This line plot shows jump-rope times. $\frac{1}{4}$ minute: X, $\frac{1}{2}$ minute: XXX, $\frac{3}{4}$ minute: X. What is the difference between the greatest and least times?	$\frac{1}{2}$ minute
5	Four bottles are shown on a line plot: $\frac{1}{4}$ L, $\frac{1}{2}$ L, $\frac{1}{2}$ L, and $\frac{3}{4}$ L. The liquid is poured together and shared equally among 4 bottles. How much liquid goes in each bottle?	$\frac{1}{2}$ L
6	This line plot shows the lengths of five paper strips. $\frac{1}{4}$ ft: X, $\frac{1}{2}$ ft: XX, $\frac{3}{4}$ ft: XX. What fraction of the strips are $\frac{3}{4}$ ft long?	$\frac{2}{5}$

PART 2 • APPLY IT

- $\frac{1}{2}$ of a full charge** Add the charges: $\frac{2}{8} + \frac{4}{8} + \frac{4}{8} + \frac{6}{8} = \frac{16}{8} = 2$. Divide 2 by 4 to get $\frac{1}{2}$.
- $3\frac{1}{8}$ seconds** Add the eighths: $\frac{2}{8} + \frac{4}{8} + \frac{6}{8} + \frac{6}{8} + \frac{7}{8} = \frac{25}{8}$. Rename $\frac{25}{8}$ as $3\frac{1}{8}$.

CHALLENGE

Remove $\frac{8}{8}$ from the total: $\frac{30}{8} - \frac{8}{8} = \frac{22}{8} = \frac{11}{4}$. Then $\frac{11}{4} \div 5 = \frac{11}{20}$, so each cup will have $\frac{11}{20}$ cup.

Accept equivalent fractions, such as $\frac{4}{8}$ for $\frac{1}{2}$. For line plots, accept Xs stacked above correctly labeled fraction values.