

Grade 4 · Line Plots with Fractions · Worksheet Answer Key

Common Core 4.MD.B.4 · mathovore.fr

Every solution shows how each value is read from the line plot and how the fractions are added or subtracted. Compare each step with your own work, and check that the number of dots matches the data.

Grade 4 Common Core: 4.MD.B.4

Problem 1: Reading points on a number line

The number line has 8 equal steps from 0 to 1, so each step is $\frac{1}{8}$. Point A is 3 steps from 0: $\frac{3}{8}$. Point B is 7 steps from 0: $\frac{7}{8}$.

Problem 2: Counting marks above a value

(a) Count the dots above $1\frac{1}{2}$: there are **3 plants**.

(b) The dots above values greater than 1 are 3 at $1\frac{1}{2}$, 1 at 2, and 1 at $2\frac{1}{2}$: $3 + 1 + 1 = \mathbf{5 plants}$.

Problem 3: How many data values?

(a) Count all the dots: $1 + 2 + 3 + 2 = \mathbf{8 strips}$.

(b) Three dots are above $\frac{3}{4}$, so **3 strips**.

Problem 4: The most common length

The tallest stack is above $3\frac{3}{4}$. It has 4 dots.

The most common length is $3\frac{3}{4}$ in., and **4 crayons** have it.

Problem 5: Shortest and longest

(a) The leftmost dot is at $\frac{3}{8}$ in.

(b) The rightmost dot is at $\frac{7}{8}$ in.

Problem 6: Longer than a given length

Look only at dots to the right of $1\frac{1}{4}$. There is 1 dot at $1\frac{3}{8}$, 3 dots at $1\frac{1}{2}$, 1 dot at $1\frac{3}{4}$, and 1 dot at $1\frac{7}{8}$.

$$1 + 3 + 1 + 1 = \mathbf{6 \text{ nails.}}$$

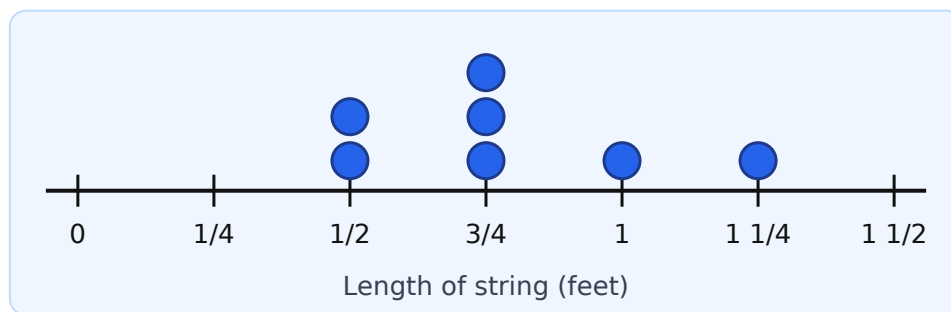
Problem 7: Comparing two groups

Shorter than $\frac{1}{2}$: 2 seeds (both at $\frac{1}{4}$). Longer than $\frac{1}{2}$: $1 + 1 + 1 = 3$ seeds.

$3 - 2 = 1$, so there is **1 more seed longer than $\frac{1}{2}$ inch.**

Problem 8: Make a line plot

Make one dot for each piece and count at the end: there must be 7 dots. 2 at $\frac{1}{2}$; 3 at $\frac{3}{4}$; 1 at 1; 1 at $1\frac{1}{4}$.



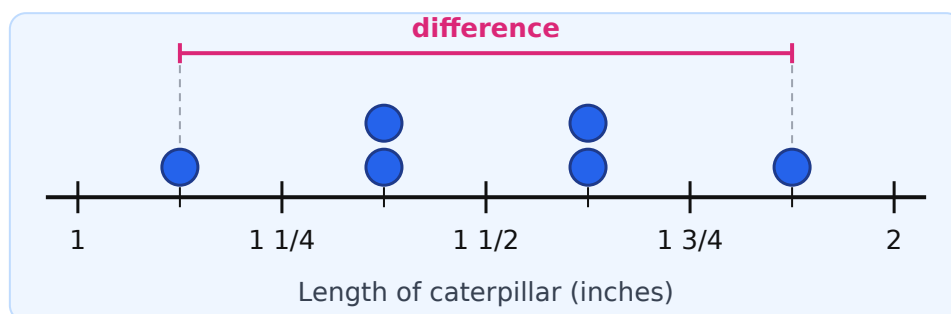
Completed line plot.

Problem 9: Longest minus shortest

Longest: $1\frac{7}{8}$ in. Shortest: $1\frac{1}{8}$ in.

$$\frac{15}{8} - \frac{9}{8} = \frac{6}{8} = \frac{3}{4}$$

The longest is $\frac{3}{4}$ in. **longer.**



The bracket marks the difference.

Problem 10: Adding two lengths

(a) $\frac{6}{4} + \frac{2}{4} = \frac{8}{4} = 2$. The total is 2 ft.

(b) $\frac{5}{4} + \frac{5}{4} = \frac{10}{4} = 2\frac{1}{2}$. The total is $2\frac{1}{2}$ ft.

Problem 11: Total of all the pieces

The values are $\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{2}$, $\frac{3}{4}$, 1.

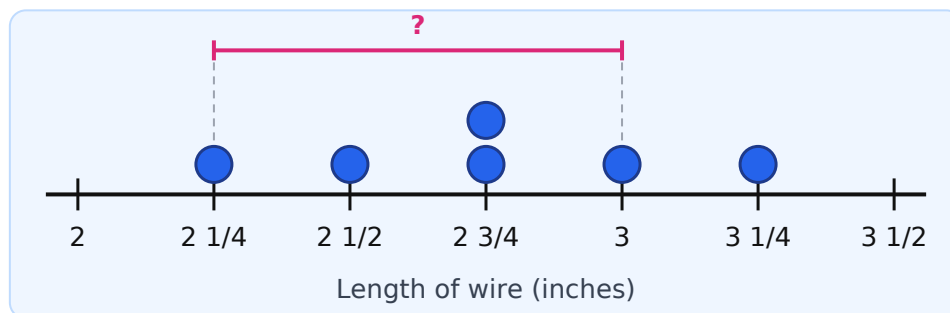
$$\frac{1}{4} + \frac{2}{4} + \frac{2}{4} + \frac{3}{4} + \frac{4}{4} = \frac{12}{4} = 3$$

The total is 3 ft.

Problem 12: Subtracting with regrouping

Write 3 as a fraction in fourths: $3 = 2 + \frac{4}{4}$. So $3 - 2\frac{1}{4} = 2\frac{4}{4} - 2\frac{1}{4} = \frac{3}{4}$.

The 3 inch wire is $\frac{3}{4}$ in. **longer**.



The bracket shows 3 minus $2\frac{1}{4}$.

Problem 13: Adding eighths

$$\frac{1}{8} + \frac{3}{8} + \frac{3}{8} + \frac{4}{8} + \frac{5}{8} + \frac{6}{8} = \frac{22}{8} = 2\frac{3}{4}$$

$$\frac{22}{8} = 2\frac{6}{8} = 2\frac{3}{4}$$

The total is $2\frac{3}{4}$ in.

Problem 14: Repeated addition

$$\frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$$

The total is $2\frac{1}{4}$ ft.

Problem 15: Choosing a scale

The value $\frac{3}{4}$ is not a multiple of $\frac{1}{2}$, so halves do not work. Every value is a multiple of $\frac{1}{4}$: $\frac{2}{4}, \frac{3}{4}, \frac{5}{4}, \frac{6}{4}$.

Use **fourths**. Eighths also work but add tick marks that are not needed.

Problem 16: Find the missing count

Add the known marks: $3 + 2 + 4 = 9$.

$10 - 9 = 1$ mark is at $1\frac{1}{4}$.

Problem 17: Ribbon for a banner

(a) $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$. The ribbon is $2\frac{1}{4}$ ft long.

(b) $2\frac{1}{4} - 2 = \frac{1}{4}$. It is $\frac{1}{4}$ ft **longer**.

Problem 18: Rainfall over 10 days

(a) Three days had $\frac{1}{8}$ inch: $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{3}{8}$. Answer: $\frac{3}{8}$ in.

(b) Wettest: $\frac{5}{8}$. Driest: 0. $\frac{5}{8} - 0 = \frac{5}{8}$. Answer: $\frac{5}{8}$ in.

(c) In eighths: $0 + 1 + 1 + 1 + 2 + 2 + 3 + 4 + 4 + 5 = 23$, so $\frac{23}{8} = 2\frac{7}{8}$. Answer: $2\frac{7}{8}$ in.

Problem 19: Two garden plots

(a) Jamal's longest is $3\frac{1}{4}$ in. and Mei's longest is $2\frac{3}{4}$ in. $\frac{13}{4} - \frac{11}{4} = \frac{2}{4} = \frac{1}{2}$. Answer: $\frac{1}{2}$ in.

(b) Jamal: $\frac{10}{4} + \frac{11}{4} + \frac{12}{4} + \frac{12}{4} + \frac{13}{4} = \frac{58}{4} = 14\frac{1}{2}$. Mei: $\frac{8}{4} + \frac{9}{4} + \frac{9}{4} + \frac{10}{4} + \frac{11}{4} = \frac{47}{4} = 11\frac{3}{4}$.

$\frac{58}{4} - \frac{47}{4} = \frac{11}{4} = 2\frac{3}{4}$. Answer: Jamal's total is $2\frac{3}{4}$ in. **greater**.

Problem 20: Rope and a knot

(a) The two longest pieces are $1\frac{1}{4}$ ft each. $\frac{5}{4} + \frac{5}{4} + \frac{4}{4} = \frac{14}{4} = 3\frac{1}{2}$. Answer: $3\frac{1}{2}$ ft.

(b) $4 - 3\frac{1}{2} = \frac{1}{2}$. Answer: $\frac{1}{2}$ ft **shorter**.

Problem 21: Find the mistake

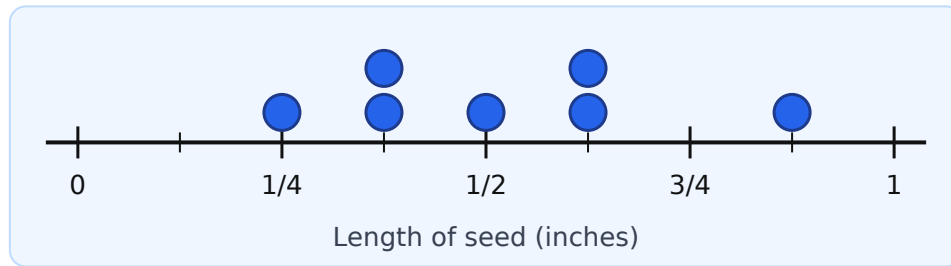
Noah added the denominators too. The two fractions are both eighths, so the unit stays the same: only the numerators are added.

$\frac{5}{8} + \frac{7}{8} = \frac{12}{8} = 1\frac{4}{8} = 1\frac{1}{2}$.

The correct sum is $1\frac{1}{2}$ in.

Problem 22: Make a plot and solve

Plot one dot for each seed.



Sofia's seeds.

(a) $\frac{2}{8} + \frac{3}{8} + \frac{3}{8} + \frac{4}{8} + \frac{5}{8} + \frac{5}{8} + \frac{7}{8} = \frac{29}{8} = 3\frac{5}{8}$. Answer: $3\frac{5}{8}$ in.

(b) $\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$. Answer: $\frac{5}{8}$ in. **longer.**