LESSON MAKER PRO

Fraction Dot Detectives

Use line-plot data to add, subtract, and compare fractional measurements.

GRADE 5 · 5.MD.B

CCSS.Math.Content.5.MD.B "Represent and interpret data."

NAME _____ DATE _____

READ THE DOTS

On a line plot, each dot stands for one data value. To find the total for a group of matching dots, multiply the measurement by the number of dots, then add or subtract group totals as the question asks.

WORKED EXAMPLE

A line plot has 4 dots above 3/8 liter. How many liters do those dots represent?

1. 4 x 3/8 = 12/8
2. 12/8 = 1 4/8
3. 1 4/8 = 1 1/2

Answer: 1 1/2 liters

PRACTICE 6 problems

1 A line plot has 5 dots above 1/8 pound. What total weight do those dots represent?

ANSWER _____

2 A line plot has 3 dots above 1/4 meter. What total length do those dots represent?

ANSWER _____

3 A line plot has 6 dots above 1/2 inch. What total length do those dots represent?

ANSWER _____

4 A line plot has 2 dots above 1/4 mile and 5 dots above 3/4 mile. What total distance do all the dots represent?

ANSWER _____

5 A line plot has 6 dots above 5/8 inch. What total length do those dots represent?

ANSWER _____

6 A line plot has 3 dots above 1/2 inch and 2 dots above 7/8 inch. How much more length is represented by the 7/8-inch group?

ANSWER _____

APPLY IT Show your work

1 At the costume club, a line plot of ribbon pieces has 5 dots at 1/4 yard and 3 dots at 3/4 yard. How many yards of ribbon are represented altogether?

WORK SPACE

ANSWER _____

2 The school running club makes a line plot of distances run during a warm-up. It has 4 dots at 5/8 mile and 6 dots at 7/8 mile. How many more miles were run by the 7/8-mile group than by the 5/8-mile group?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A line plot of comic-book reading times has 2 dots at 1/4 hour, x dots at 1/2 hour, and 3 dots at 3/4 hour. The total time represented is 5 1/4 hours. What is x? Explain how you know.

WORK SPACE AND ANSWER

ANSWER KEY

Fraction Dot Detectives

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A line plot has 5 dots above 1/8 pound. What total weight do those dots represent?	**5/8 pound**
2	A line plot has 3 dots above 1/4 meter. What total length do those dots represent?	**3/4 meter**
3	A line plot has 6 dots above 1/2 inch. What total length do those dots represent?	**3 inches**
4	A line plot has 2 dots above 1/4 mile and 5 dots above 3/4 mile. What total distance do all the dots represent?	**4 1/4 miles**
5	A line plot has 6 dots above 5/8 inch. What total length do those dots represent?	**3 3/4 inches**
6	A line plot has 3 dots above 1/2 inch and 2 dots above 7/8 inch. How much more length is represented by the 7/8-inch group?	**1/4 inch**

PART 2 · APPLY IT

1. **3 1/2 yards** Multiply each ribbon length by its number of dots: 5 x 1/4 = 5/4 and 3 x 3/4 = 9/4. Add 5/4 + 9/4 = 14/4 = 3 1/2.
2. **2 3/4 miles** The 7/8-mile group ran 6 x 7/8 = 42/8 miles, and the 5/8-mile group ran 4 x 5/8 = 20/8 miles. Subtract: 42/8 - 20/8 = 22/8 = 2 3/4.

CHALLENGE

x = 5. The known dots represent 2 3/4 hours, leaving 2 1/2 hours. Five groups of 1/2 hour make 2 1/2 hours.

Accept equivalent fraction forms before simplification. For the challenge, accept x = 5 with a correct explanation that accounts for the known total and the remaining half-hour groups.