

Line Graph Math

Read the points, then choose the operations

GRADE 4 • 4.PS.1.d.v

4.PS.1.d.v "Analyze data represented in line graphs and communicate results orally and in writing: solve single-step and multistep addition and subtraction problems using data from line graphs."

NAME _____

DATE _____

READ, COMPARE, EXPLAIN

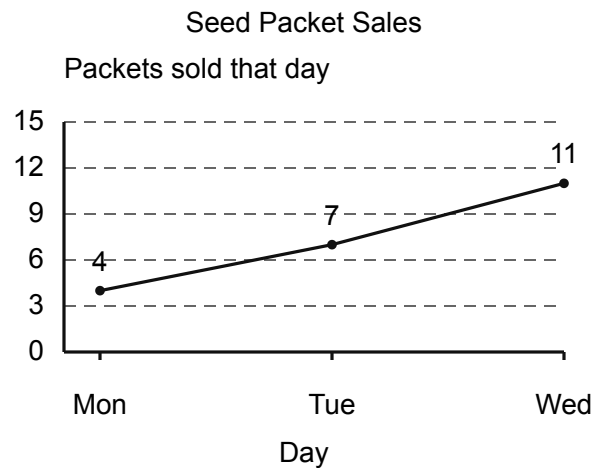
Use the plotted observations to choose numbers for your equation. Add counts for separate days when a total is requested. Subtract to compare two counts. For first-to-last change, increases and decreases work in opposite directions. Show equations with units and explain one answer aloud.

WORKED EXAMPLE

How many more seed packets were sold Wednesday than Monday?

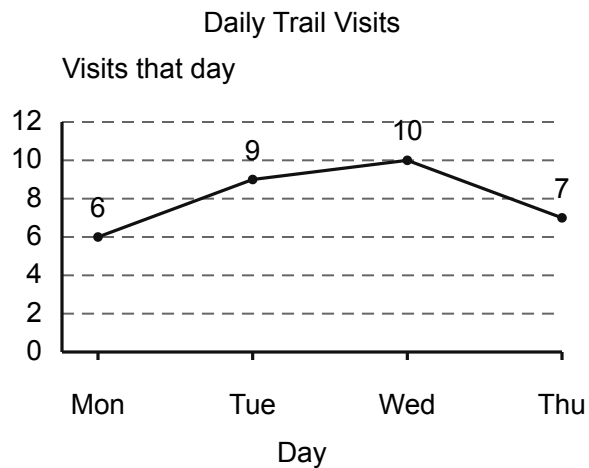
1. Read Monday as 4 packets and Wednesday as 11.
2. Subtract: $11 - 4 = 7$.

Answer: Wednesday had 7 more packets sold.



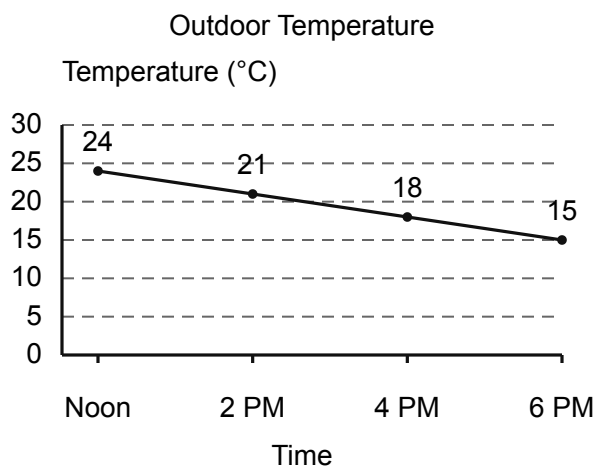
PRACTICE 4 problems

- 1** Use Daily Trail Visits. How many more visits were recorded Wednesday than Monday?



- 2** Use Daily Trail Visits in Practice 1. How many visits were recorded Monday and Thursday altogether?

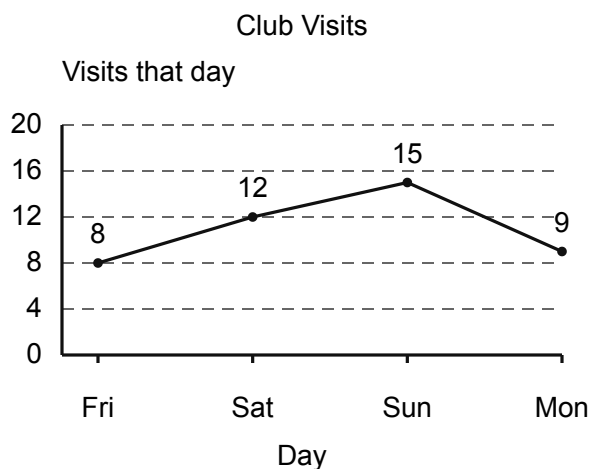
- 3** Use Outdoor Temperature. How many degrees cooler was 6 PM than noon?



- 4** Use Outdoor Temperature in Practice 3. Find each two-hour drop. Add the drops and check against your answer in Practice 3.

APPLY IT Show your work

- 1** Use Club Visits. Find the rise in the daily count from Friday to Sunday, then the fall from Sunday to Monday. Use both changes to find Monday's count compared with Friday's.



- 2** Use Club Visits in Apply It 1. Add Friday and Saturday visits; add Sunday and Monday visits. How many more visits were in the second pair of days? Tell a partner why this needs more than one operation.

CHALLENGE One step up

Use Club Visits in Apply It 1. Kai adds the rise of 7 and fall of 6 and says Monday had 13 more visits than Friday. Explain the error. Check the correct first-to-last difference directly from the graph.

Require graph readings, equations and correct units. Daily visits may be added as visits, not as a claim about distinct individual people. Endpoint change is net change; a rise plus the magnitude of a fall is a different quantity. No gross additions/removals are inferred from inventory counts. Accept equivalent solution methods. Printed dots are recorded observations; connecting segments do not create new measured observations.

PRACTICE 1

$10 - 6 = 4$ more visits.

PRACTICE 2

$6 + 7 = 13$ visits altogether.

PRACTICE 3

$24 - 15 = 9^{\circ}\text{C}$ cooler.

PRACTICE 4

Each drop is 3°C : $24 - 21$, $21 - 18$, and $18 - 15$. Their sum is 9°C , matching Practice 3.

APPLY IT 1

Rise: $15 - 8 = 7$ visits. Fall: $15 - 9 = 6$. Net increase: $7 - 6 = 1$ visit; Monday had 1 more visit than Friday. Require the stated evidence and reasoning; accept equivalent correct wording.

APPLY IT 2

First pair: $8 + 12 = 20$. Second pair: $15 + 9 = 24$. Difference: $24 - 20 = 4$ more visits. Two sums are compared.

Require the stated evidence and reasoning; accept equivalent correct wording.

CHALLENGE

Kai added the sizes of opposite changes. The fall offsets the rise: $7 - 6 = 1$. Direct check: $9 - 8 = 1$ more visit on Monday.