

Find the Balance

Use line plots to show where data balances.

GRADE 6 • 6.PS.2.a

6.PS.2.a "Represent the mean of a set of data graphically as the balance point represented in a line plot (dot plot)."

NAME _____

DATE _____

BALANCE POINT

The mean is the point where all the dots in a data set would balance if every dot had the same weight. Add the data values, divide by the number of values, then draw a vertical balance line at the mean on the line plot.

WORKED EXAMPLE

The data are 31, 33, 33, and 35.
Make a line plot and show the balance point.

1. $31 + 33 + 33 + 35 = 132$
2. There are 4 data values.
3. $132 / 4 = 33$
4. Place one dot at 31, two dots at 33, and one dot at 35. Draw the balance line at 33.

Answer: The mean is 33, so the line plot balances at 33.

PRACTICE 6 problems

- 1** The data are 4, 5, 5, and 6. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

- 2** The data are 7, 8, 9, and 10. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

- 3** The data are 16, 16, 17, 18, and 19. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

- 4** The data are 11, 12, 12, 13, 14, and 14. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

- 5** The data are 23, 23, 24, 25, and 25. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

- 6** The data are 26, 27, 27, 28, 30, and 30. Make a line plot. At what number should you draw the vertical balance line?

ANSWER _____

APPLY IT Show your work

- 1** Five friends tracked the minutes they practiced a new dance: 18, 20, 20, 22, and 25 minutes. Make a line plot of the times. Draw a vertical balance line at the mean practice time.

WORK SPACE

ANSWER _____

- 2** A student counted the photos in five albums: 52, 54, 54, 56, and 59 photos. Make a line plot of the data. Draw a vertical balance line at the mean number of photos.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A line plot has two dots at 10, three dots at 13, and two dots at 16. Make the line plot and draw its vertical balance line. Explain how the dots on both sides show that your line is at the balance point.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The data are 4, 5, 5, and 6. Make a line plot. At what number should you draw the vertical balance line?	5
2	The data are 7, 8, 9, and 10. Make a line plot. At what number should you draw the vertical balance line?	8 1/2
3	The data are 16, 16, 17, 18, and 19. Make a line plot. At what number should you draw the vertical balance line?	17 1/5
4	The data are 11, 12, 12, 13, 14, and 14. Make a line plot. At what number should you draw the vertical balance line?	12 2/3
5	The data are 23, 23, 24, 25, and 25. Make a line plot. At what number should you draw the vertical balance line?	24
6	The data are 26, 27, 27, 28, 30, and 30. Make a line plot. At what number should you draw the vertical balance line?	28

PART 2 • APPLY IT

- 21 minutes** The total is $18 + 20 + 20 + 22 + 25 = 105$. Divide 105 by 5, so the balance line is at 21 minutes.
- 55 photos** The total is $52 + 54 + 54 + 56 + 59 = 275$. Divide 275 by 5, so the balance line is at 55 photos.

CHALLENGE

The balance line is at 13. Each dot at 10 pairs with a dot at 16, so the equal pulls balance around 13, and the three dots at 13 are already on the balance line.

Accept equivalent forms, such as 8.5 for $8 \frac{1}{2}$ and 17.2 for $17 \frac{1}{5}$. On each line plot, accept a vertical line or other clear mark placed at the exact mean, including between whole-number labels when needed.