

Step Spotters

Read dot plots, classify the steps, and solve each problem.

GRADE 3 • TEKS 3.8.B

3.8.B "solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals."

NAME _____

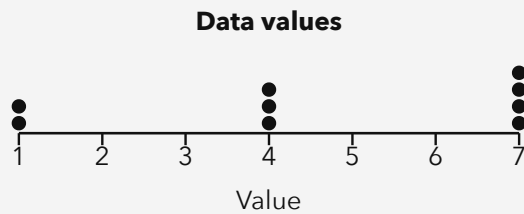
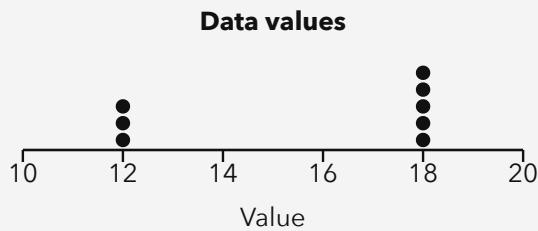
DATE _____

COUNT THE STEPS

One-step problem: A one-step problem needs one addition or subtraction after you read the dots. You use two amounts in one calculation. Two-step problem: A two-step problem needs two calculations. You may combine three amounts by adding twice.

WORKED EXAMPLE

Example 1: Subtract the number of dots at 12 from the number at 18. Example 2: Combine the dots at 1, 4, and 7.



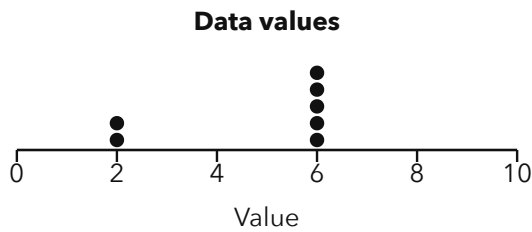
1. First plot: five dots at 18 minus three dots at 12 is $5 - 3 = 2$. One subtraction.
2. Second plot: add $2 + 3 = 5$, then $5 + 4 = 9$. Two additions.

Answer: First: ONE STEP, 2 more dots. Second: TWO STEPS, 9 dots altogether.

PRACTICE 8 problems

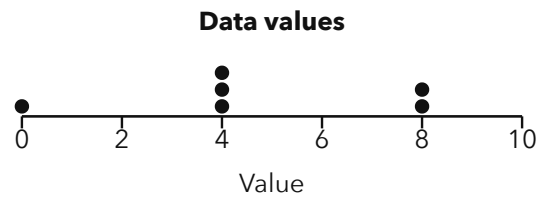
Circle ONE STEP or TWO STEPS for each item, then choose two items and explain which calculations show the number of steps. Also solve every question and show the calculation.

- 1** Figure 1: How many more dots are at 6 than at 2? Choose ONE STEP or TWO STEPS. Solve it.



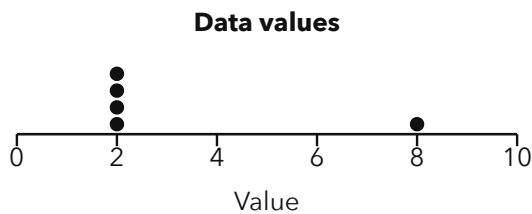
ANSWER _____

- 2** Figure 2: How many dots are at 0, 4, and 8 altogether? Choose ONE STEP or TWO STEPS. Solve it.



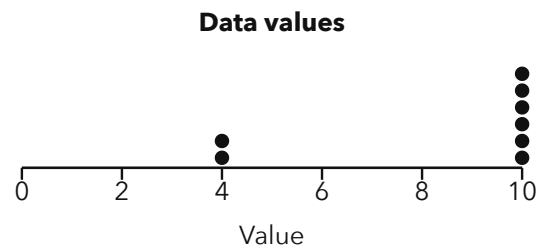
ANSWER _____

- 3** Figure 3: How many dots are at 2 and 8 altogether? Choose ONE STEP or TWO STEPS. Solve it.



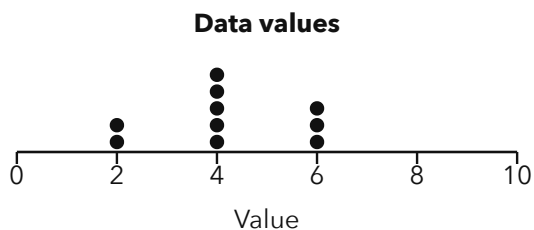
ANSWER _____

- 4** Figure 4: How many more dots are at 10 than at 4? Choose ONE STEP or TWO STEPS. Solve it.



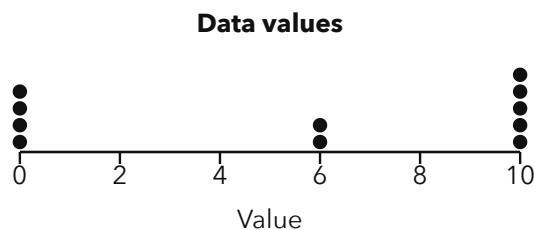
ANSWER _____

- 5** Figure 5: How many dots are at 2, 4, and 6 altogether? Choose ONE STEP or TWO STEPS. Solve it.



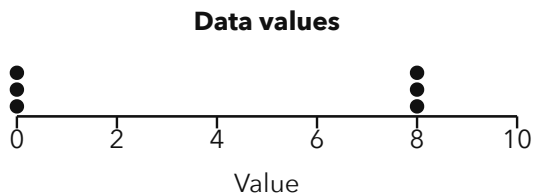
ANSWER _____

- 6** Figure 6: How many dots are at 0, 6, and 10 altogether? Choose ONE STEP or TWO STEPS. Solve it.



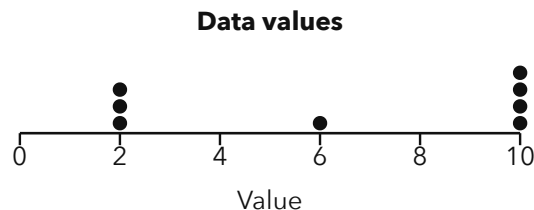
ANSWER _____

- 7** Figure 7: How many dots are at 0 and 8 altogether? Choose ONE STEP or TWO STEPS. Solve it.



ANSWER _____

- 8** Figure 8: How many dots are at 2, 6, and 10 altogether? Choose ONE STEP or TWO STEPS. Solve it.



ANSWER _____

APPLY IT Show your work

- 1** Choose two practice items. For each one, identify the item and explain how you knew where it belonged.

2 Write one new one-step dot-plot question and one new two-step dot-plot question.

CHALLENGE One step up

Draw a dot plot with dots at three values, write a two-step total question about it, and solve it.

Draw a plot with three values Title: _____



PRACTICE 1

ONE STEP. Read 5 and 2, then subtract once.
Answer: 3.

PRACTICE 2

TWO STEPS. Add $1 + 3$, then add 2. **Answer: 6.**

PRACTICE 3

ONE STEP. Add $4 + 1$ once. **Answer: 5.**

PRACTICE 4

ONE STEP. Read 6 and 2, then subtract once.
Answer: 4.

PRACTICE 5

TWO STEPS. Add $2 + 5$, then add 3. **Answer: 10.**

PRACTICE 6

TWO STEPS. Add $4 + 2$, then add 5. **Answer: 11.**

PRACTICE 7

ONE STEP. Add $3 + 3$ once. **Answer: 6.**

PRACTICE 8

TWO STEPS. Add $3 + 1$, then add 4. **Answer: 8.**

APPLY IT 1

For example: Item 1: ONE STEP. Read 5 and 2, then subtract once. **Item 2: TWO STEPS.** Add $1 + 3$, then add 2. Accept any two correct explanations using the displayed data and the rule.

APPLY IT 2

A dot plot has 4 dots at 12 and 7 dots at 14. How many more dots are at 14 than at 12? A dot plot has 2 dots at 1, 3 dots at 3, and 5 dots at 5. How many dots are at 1, 3, and 5 altogether? Answers to these examples: $7 - 4 = 3$; $2 + 3 + 5 = 10$. Accept other valid examples that satisfy each category.

CHALLENGE

I drew 2 dots at 1, 3 dots at 3, and 4 dots at 5.

Question: How many dots are at 1, 3, and 5 altogether? Answer: $2 + 3 + 4 = 9$.

Answers: 1 ONE STEP, 2 TWO STEPS, 3 ONE STEP, 4 ONE STEP, 5 TWO STEPS, 6 TWO STEPS, 7 ONE STEP, 8 TWO STEPS. For Apply It 1, accept explanations that correctly identify one calculation for a one-step item or two calculations for a two-step item. Preserve every observation as a separate stacked dot. Practice numerical answers in order: 3, 6, 5, 4, 10, 11, 6, 8.

One valid challenge plot

