

Stem-and-Leaf Plots

Name: _____

Date: _____

Score: _____ / 24

Q Quick Review

A **stem-and-leaf plot** organizes data while keeping every original value. Each number is split into a **stem** (the leading digit or digits) and a **leaf** (the last digit). For example, 34 has stem 3 and leaf 4. Leaves for the same stem are written in a row, in order, so a value like 34 appears in the “3” row. Reading a value means joining its stem and leaf back together. Stem-and-leaf plots show the **shape** of the data and make it easy to find the **minimum, maximum, median, and mode**.

◇ **Example:** A stem-and-leaf plot has stem 1 with leaves 2, 5, 8, and stem 2 with leaves 1, 4, 7. List the data and find the median.

⇒ Rebuild each value by joining its stem and leaf. Stem 1 gives 12, 15, 18; stem 2 gives 21, 24, 27. So the data set is 12, 15, 18, 21, 24, 27 — already in order, which is the nice thing about these plots. There are 6 values, so the median is the average of the 3rd and 4th: $(18 + 21) \div 2 = 19.5$.

Answer: 12, 15, 18, 21, 24, 27; median = 19.5

PRACTICE

Use the described stem-and-leaf plot to answer each question.

- Stem 3 has leaf 7. What value is this? _____
- Stem 5 has leaf 2. What value is this? _____
- Stem 1 has leaves 4, 9. List the values. _____
- Stem 2 has leaves 0, 3, 6. List the values. _____
- Stems 1–2; stem 1:5,8, stem 2:1,4. How many values? _____
- Plot: stem 1:2,7, stem 2:3,9. What is the minimum? _____
- Plot: stem 1:2,7, stem 2:3,9. What is the maximum? _____
- Plot: stem 1:2,7, stem 2:3,9. What is the range? _____
- Plot: stem 3:1,5, stem 4:2,8. List all values. _____
- Plot: stem 3:1,5, stem 4:2,8. What is the median? _____
- Plot: stem 2:5,5,8, stem 3:1. What is the mode? _____
- Plot: stem 2:5,5,8, stem 3:1. How many values? _____
- Plot: stem 4:0,4, stem 5:2,6,9. What is the minimum? _____
- Plot: stem 4:0,4, stem 5:2,6,9. What is the maximum? _____
- Plot: stem 4:0,4, stem 5:2,6,9. How many values? _____
- Plot: stem 1:0,5, stem 2:0,5. What is the median? _____
- Plot: stem 6:3, stem 7:1,1,8. What is the mode? _____
- Plot: stem 6:3, stem 7:1,1,8. What is the range? _____
- Stem 8 has leaf 0. What value is this? _____
- Plot: stem 1:2,4,6,8. What is the median? _____

◆ Word Problems

- A stem-and-leaf plot of test scores has stem 7 with leaves 0, 5, 8 and stem 8 with leaves 2, 4, 6, 9. How many students took the test, and what was the highest score? _____
- A stem-and-leaf plot of ages has stem 1 with leaves 1, 3, 3, 5 and stem 2 with leaves 0, 8. List the data and find the mode. _____
- A stem-and-leaf plot of plant heights (cm) has stem 2 with leaves 0, 4 and stem 3 with leaves 0, 6. Find the median height. _____



24. A coach made a stem-and-leaf plot of points scored: stem 1 has leaves 2, 8 and stem 2 has leaves 1, 5. What is the range of the points scored? _____



Answer Keys

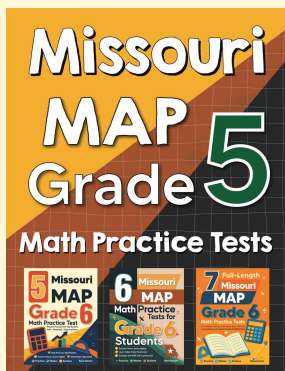
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. 37 2. 52 3. 14, 19 4. 20, 23, 26 5. 4 6. 12 7. 29 8. 17 9. 31, 35, 42, 48 10. 38.5 11. 25 12. 4 | <ol style="list-style-type: none"> 13. 40 14. 59 15. 5 16. 15 17. 71 18. 15 19. 80 20. 15 21. 7 students; highest = 89 22. 11, 13, 13, 15, 20, 28; mode = 13 23. 27 cm 24. 13 points |
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Step-by-Step Explanations

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| <ol style="list-style-type: none"> 1. Join the stem and leaf: stem 3, leaf 7 makes 37. 2. Stem 5 with leaf 2 is the value 52. 3. Stem 1 with leaves 4 and 9 gives 14 and 19. 4. Joining stem 2 with each leaf gives 20, 23, and 26. 5. Count all the leaves: $2 + 2 = 4$ values. 6. The smallest value is the lowest stem with its smallest leaf: 12. 7. The largest value is the highest stem with its largest leaf: 29. 8. Maximum minus minimum: $29 - 12 = 17$. 9. Join each stem with its leaves: 31, 35, 42, 48. 10. The data is 31, 35, 42, 48; the median is the average of the two middle values, $(35 + 42) \div 2 = 38.5$. 11. The value 25 appears twice (leaf 5 shows up twice on stem 2), so it is the mode. 12. Count the leaves: $3 + 1 = 4$ values. 13. Lowest stem, smallest leaf: 40. | <ol style="list-style-type: none"> 14. Highest stem, largest leaf: 59. 15. Count the leaves: $2 + 3 = 5$ values. 16. The data is 10, 15, 20, 25; the median is $(15 + 20) \div 2 = 17.5$. 17. The value 71 appears twice, so it is the mode. 18. Minimum is 63, maximum is 78: $78 - 63 = 15$. 19. Stem 8 with leaf 0 is the value 80. 20. The data is 12, 14, 16, 18; the median is $(14 + 16) \div 2 = 15$. 21. Count all the leaves: $3 + 4 = 7$ students. The highest score is the largest stem with its largest leaf: stem 8, leaf 9, which is 89. 22. Joining stems and leaves gives 11, 13, 13, 15, 20, 28. The value 13 appears twice — more than any other — so it is the mode. 23. The data is 20, 24, 30, 36. With 4 values, the median is the average of the middle two: $(24 + 30) \div 2 = 27$ cm. 24. The data is 12, 18, 21, 25. The range is the maximum minus the minimum: $25 - 12 = 13$ points. |
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