

Mean, Median, Mode, and Range

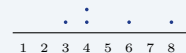
Name: _____ Date: _____ Score: _____ / 18

Quick Review and Helpful Hints

For a data set: the *mean* is the sum divided by how many numbers there are; the *median* is the middle value once the data is ordered (average the two middle values if there is an even count); the *mode* is the value that appears most often; the *range* is the largest value minus the smallest.

▶ **Example:** Find the mean of 4, 8, 6, 4, 3. **Work:** Add the values:
 $4 + 8 + 6 + 4 + 3 = 25$. Then divide by how many there are, which is 5:
 $\frac{25}{5}$.

★ **Answer:** 5



The data 3, 4, 4, 6, 8 as a dot plot.

Practice Problems

Find the requested measure for each data set.

- | | | | |
|---------------------------|-------|------------------------------|-------|
| 1. Mean of 2, 4, 6 | _____ | 8. Range of 20, 5, 12 | _____ |
| 2. Mean of 5, 5, 8, 10, 2 | _____ | 9. Mean of 10, 20, 30, 40 | _____ |
| 3. Median of 3, 7, 9 | _____ | 10. Median of 8, 3, 5, 9, 1 | _____ |
| 4. Median of 2, 4, 6, 8 | _____ | 11. Mode of 6, 7, 7, 8, 8, 8 | _____ |
| 5. Mode of 3, 3, 5, 7 | _____ | 12. Range of 2, 2, 2 | _____ |
| 6. Mode of 1, 2, 2, 2, 5 | _____ | 13. Mean of 7, 9, 11, 13 | _____ |
| 7. Range of 4, 9, 15 | _____ | 14. Median of 12, 4, 8, 16 | _____ |

Word Problems

15. Test scores are 80, 90, 85, 95, 100. What is the mean score?

16. In the data 3, 5, 7, 7, 9, what is the mode?

17. Daily highs were 60, 72, 68, 75, 65. What is the range?

18. Ages at a table are 10, 12, 14, 16, 18. What is the median age?



Answer Keys

- | | | |
|-----------------------------------|------------------------------------|-------------------------------------|
| 1. <input type="text" value="4"/> | 7. <input type="text" value="11"/> | 13. <input type="text" value="10"/> |
| 2. <input type="text" value="6"/> | 8. <input type="text" value="15"/> | 14. <input type="text" value="10"/> |
| 3. <input type="text" value="7"/> | 9. <input type="text" value="25"/> | 15. <input type="text" value="90"/> |
| 4. <input type="text" value="5"/> | 10. <input type="text" value="5"/> | 16. <input type="text" value="7"/> |
| 5. <input type="text" value="3"/> | 11. <input type="text" value="8"/> | 17. <input type="text" value="15"/> |
| 6. <input type="text" value="2"/> | 12. <input type="text" value="0"/> | 18. <input type="text" value="14"/> |

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The mean is the sum divided by the count. Add: $2 + 4 + 6 = 12$, then divide by 3: $12 \div 3 = 4$. So the final answer is 4.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Add all five: $5 + 5 + 8 + 10 + 2 = 30$, then divide by 5: $30 \div 5 = 6$. So the final answer is 6.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The data is already in order, so the middle value is 7. So the final answer is 7.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is With an even count, average the two middle values: $\frac{4+6}{2} = 5$. So the final answer is 5.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The mode is the most frequent value – 3 appears twice. So the final answer is 3.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 2 appears three times, more than any other, so the mode is 2. So the final answer is 2.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Range is the largest minus the smallest: $15 - 4 = 11$. So the final answer is 11.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Largest minus smallest: $20 - 5 = 15$. So the final answer is 15.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Add: $10 + 20 + 30 + 40 = 100$, then divide by 4: $100 \div 4 = 25$. So the final answer is 25.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Put them in order: 1, 3, 5, 8, 9. The middle value is 5. So the final answer is 5.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is 8 appears three times, the most, so the mode is 8. So the final answer is 8.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Largest minus smallest: $2 - 2 = 0$. So the final answer is 0.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Add: $7 + 9 + 11 + 13 = 40$, then divide by 4: $40 \div 4 = 10$. So the final answer is 10.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Put them in order: 4, 8, 12, 16. Average the two middle: $\frac{8+12}{2} = 10$. So the final answer is 10.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The mean is the total over the count: $80 + 90 + 85 + 95 + 100 = 450$, then $450 \div 5 = 90$. So the final answer is 90.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The most frequent value is 7 (it appears twice). So the final answer is 7.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Largest minus smallest: $75 - 60 = 15$. So the final answer is 15.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The values 10, 12, 14, 16, 18 are already ordered, so the middle is 14. So the final answer is 14.



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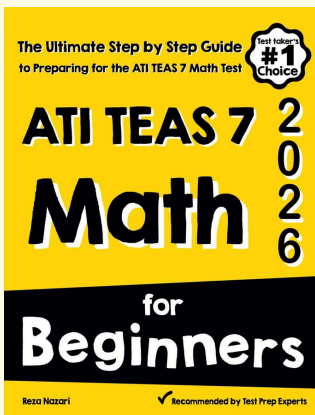
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