Name_____ Date_____ Period_____

**LESSON 2-6 · SESSION 1 · PRACTICE · FORM B**

# Median and Outliers

Learning target – I can explain why the median is a better measure of center than the mean when a data set has an outlier. · 6.SP.B.5d

**REMEMBER**

- An **outlier** is a value far from all the others. It can be very high or very low.
- An outlier **pulls the mean** toward it. The **median** stays in the middle of the group.
- With an outlier, the median is the better measure of a **typical** value.

**WORKED EXAMPLE**

Car counts: 44, 39, 41, 47, 43, 45, 120.

**Step 1** Order: 39, 41, 43, 44, 45, 47, 120.

**Step 2** Outlier: 120. Median: 44 (the 4th value).

**Step 3** Mean: 379 ÷ 7 ≈ 54, greater than 6 of the 7 counts.

**Answer** **Typical Saturday: about 44 cars (the median)**

**WORDS** **outlier** *(valor atípico)* · **median** *(mediana)* · **mean** *(media)*

## PRACTICE

*show your work · label units*

**1. Cup Sales.** Seven weekends brought 52, 48, 50, 55, 51, 53, 130 cups.

**Hint** *Order first. The outlier is far from all the others.*

**a.** Outlier: ___

**b.** Median: ___

**c.** Typical value to report: ___

**2. Long Jumps.** Seven jumps went 41, 44, 43, 46, 42, 45, 85 inches.

**a.** Outlier: ___

**b.** Median: ___

**3. Missed Questions.** Seven students: 7, 9, 8, 10, 6, 5, 48.

**Hint** *Does the middle value move?*

**a.** Median: ___

**b.** Median if 48 becomes 10: ___

**4. Museum Tickets.** Seven tickets cost 26, 31, 24, 29, 33, 28, 140 dollars. Find the median price. Why does it describe a typical ticket better than the largest price?

*Show your work.*

**Answer**_____ dollars

**5. Bigger Outlier.** A set of 11 wait times has a median of 35 minutes. Its largest value, 240 minutes, changes to 400 minutes. What happens to the median?

**Hint** *Does the order of the values change?*

☐ It goes up. ☐ It stays the same. ☐ It goes down.

**Why**_____

**6. Low Outlier.** Daily step counts (hundreds): 74, 79, 83, 81, 77, 85, 3.

**a.** Median: ___ **b.** Median if 3 drops to 0: ___

**7. Weekly Tips.** Seven days of tips (dollars): 31, 27, 34, 29, 36, 33, 110. The mean is $42.86.

**Hint** *Compare the mean with most of the values.*

**a.** Median: _____ dollars

**b.** Outlier: _____ dollars

**c.** Which describes a typical day better, the mean or the median? Why?

**8. Shop Salaries.** Six workers earn $34,000, $36,000, $33,000, $38,000, $35,000 and $244,000.

**a.** Find the median salary. _____ dollars

**b.** The mean is $70,000. Why is it misleading?

**c.** Which measure would you print in a job ad? Why?

*Show your work.*

## FIND THE ERROR

*explain the mistake, then fix it*

**9. Teodoro's Work.** For 30, 33, 35, 38, 41, 44, 200, Teodoro wrote: "The typical value is 200 because it stands out the most." Explain the mistake and give a typical value.

## TEST PRACTICE

*choose the best answer*

**10.** Which measure of center is least affected by an outlier?

**A** mean **B** median **C** greatest value **D** range

**11.** A very large outlier pulls the mean –

**A** down **B** up **C** to 0 **D** nowhere

**SELF-CHECK CODE** *find your answer · copy its letter into that problem's box · spell a math word*

| 70,000<br>Z | 33<br>O | 52<br>S | 42.86<br>Q | 29<br>N | 44<br>T | 110<br>U | 8<br>A | 79<br>D | 35,500<br>T |
|---|---|---|---|---|---|---|---|---|---|

| #1b | #2b | #3a | #4 | #6a | #7a | #7b | #8a |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| CHECK YOURSELF | □ I can do this on my own | □ I need a little help | □ I have a question about #___ |
|---|---|---|---|