Name_____ Date_____ Period_____

**LESSON 2-5 · SESSION 2 · PRACTICE · FORM A**

# Comparing Variability

Learning target – I can compare the variability of two data sets using range and IQR. · 6.SP.B.5c

**REMEMBER**

- **More consistent** = less spread out = smaller range or smaller IQR.
- Compare the **same** measure for both groups. Equal ranges can hide different IQRs.
- With one far-out value, trust the **IQR** more than the range.

**WORKED EXAMPLE**

Class R: range 18, IQR 12. Class S: range 35, IQR 25.

**Step 1** Ranges: 18 < 35.

**Step 2** IQRs: 12 < 25.

**Step 3** Both measures are smaller for R.

**Answer** **Class R is more consistent**

**WORDS** **consistent** *(constante)* · **range** *(rango)* · **IQR** *(rango intercuartil)*

## PRACTICE

*show your work · label units*

**1. Two Classes.** Class R scores: 70, 82, 76, 88, 73, 85, 79. Class S scores: 60, 90, 75, 95, 65, 80, 72. Complete the table.

**Hint** *Order each list on its own first.*

| | Range | Q1 | Q3 | IQR |
|---|---|---|---|---|
| **Class R** | | | | |
| **Class S** | | | | |

**More consistent**_____

**2. Vending Machines.** Machine 1 daily sales: 30, 42, 35, 50, 38, 46, 33. Machine 2: 34, 39, 41, 37, 43, 40, 45.

**a.** Range 1: ___ **b.** IQR 1: ___ **c.** Range 2: ___ **d.** IQR 2: ___

**3. Devi's Claim.** Sets V and W both have a range of 40. V has Q1 = 15 and Q3 = 35; W has Q1 = 25 and Q3 = 30. Devi says they vary the same amount.

**Hint** *Equal ranges only match the extremes.*

☐ Right ☐ Not right

**IQRs**_____

**4. Hugo's Claim.** Sets T and U both have an IQR of 12. T runs from 30 to 54; U runs from 8 to 96. Hugo says they are equally spread out.

**Hint** *Equal IQRs only match the middle halves.*

☐ Right ☐ Not right

**Ranges**_____

**5. Choosing a Measure.** A list of home prices has one house priced far above all the others. Which measure of spread fits better, the range or the IQR? Explain.

_____

_____

**6. Different Stories.** Set M has range 40 and IQR 6. Set N has range 24 and IQR 18.

**Hint** *A range much bigger than the IQR points to an extreme value.*

**a.** Wider middle half: ___ **b.** Likely has one unusual value: ___

**7. Phone Batteries.** Phone 1 hours: 16, 20, 18, 24, 22, 26, 14. Phone 2 hours: 19, 21, 20, 23, 18, 24, 17.

**a.** Range 1: ___ **b.** IQR 1: ___ **c.** Range 2: ___ **d.** IQR 2: ___

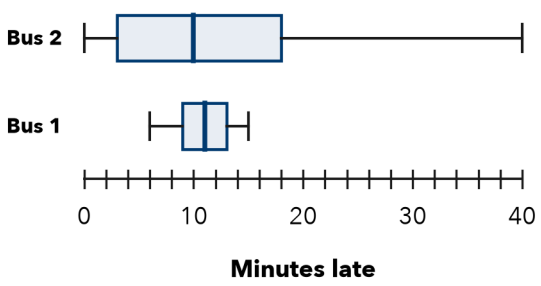
**8. Choosing a Bus.** The box plots show how many minutes late each bus was.

**a.** IQR of Bus 1: _____

**b.** IQR of Bus 2: _____

**c.** More predictable: _____

**d.** Bus 2 is sometimes almost on time. Why might you still choose Bus 1?




## FIND THE ERROR

*explain the mistake, then fix it*

**9. Harlan's Work.** Harlan wrote: "Set A has the greater IQR, so Set A must have the greater range too." Explain the mistake.

_____

_____

## TEST PRACTICE

*choose the best answer*

**10.** A smaller IQR means the middle half of the data is –

**A** more spread out **B** closer together **C** greater **D** missing values

**11.** A range much larger than the IQR suggests –

**A** an extreme value **B** no variability **C** equal quartiles **D** a small data set

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

| 5<br>I | 8<br>Y | 15<br>G | Class S<br>Q | 13<br>A | 4<br>N | 17<br>Z | Class R<br>V | 9<br>X | 6<br>R |
|---|---|---|---|---|---|---|---|---|---|

| #1 | #2b | #2d | #7b | #7d | #8a | #8b |
|---|---|---|---|---|---|---|
| | | | | | | |

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