Comparing Two Populations Visually

Explore ideas and representations

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Compare plots on a common scale for center, spread, and overlap. Dot plots show individual values; box plots show min, lower quartile, median, upper quartile, max. For $2, 3, 3, 4, 4, 5$, median 3.5 and range 3. Adding 3 to every value raises the median to 6.5 but keeps range 3. Quartiles are medians of the lower and upper halves.

Worked example

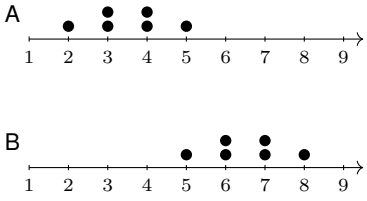
Compare ranges of $2, 3, 4$ and $1, 3, 5$.

1. First range $= 4 - 2 = 2$.
2. Second range $= 5 - 1 = 4$.
3. Both medians are 3, so equal center does not imply equal spread.
Answer: Ranges 2 and 4; first set is less spread.

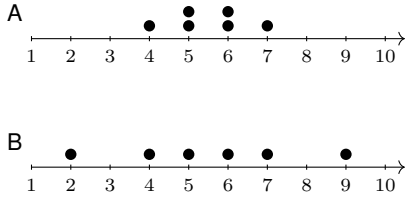
Practice Problems

Show your thinking.

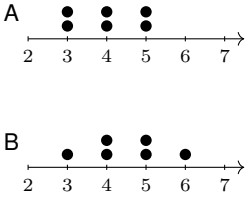
1. Read each median from the dot plots. Which group has the larger typical value? Use A and B on the common scale.



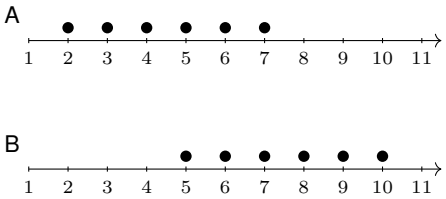
2. Compare the full ranges in the dot plots. Which group is less spread out? Use A and B on the common scale.



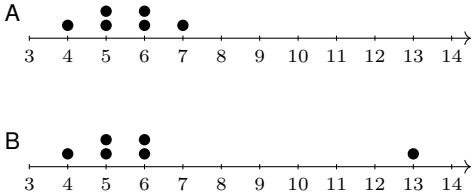
3. List shared values in the dot plots and compare medians. Use A and B on the common scale.



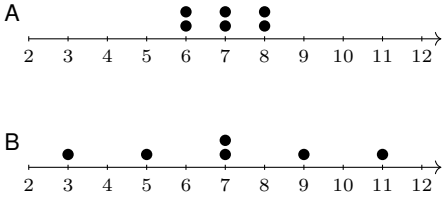
4. Describe the horizontal shift from A to B. Compare median change with range change. Use A and B on the common scale.



5. Identify the isolated high value in B; compare maximum values and ranges. Use A and B on the common scale.



6. Which dot plot clusters more tightly? Support your choice with the two ranges. Use A and B on the common scale.



Answer Key

1. Medians A $\frac{7}{2}$, B $\frac{13}{2}$; ranges A 3, B 3. B has the larger median.
2. Medians A $\frac{11}{2}$, B $\frac{11}{2}$; ranges A 3, B 7. A has the smaller range.
3. Shared values $3, 4, 5$; medians A 4 and B $\frac{9}{2}$.
4. Medians A $\frac{9}{2}$, B $\frac{15}{2}$; ranges A 5, B 5. B is a shift of 3; the range is unchanged.
5. Medians A $\frac{11}{2}$, B $\frac{11}{2}$; ranges A 3, B 9. Maximum A 7, B 13; their medians are equal.
6. Medians A 7, B 7; ranges A 2, B 8. A has the smaller range.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. A median $= (3+4)/2 = \frac{7}{2}$; range $5-2=3$.
2. B median $= (6+7)/2 = \frac{13}{2}$; range $8-5=3$.
3. Median gap B minus A $= 3$; range change $= 0$.

Problem 2

1. A median $= (5+6)/2 = \frac{11}{2}$; range $7-4=3$.
2. B median $= (5+6)/2 = \frac{11}{2}$; range $9-2=7$.
3. Median gap B minus A $= 0$; range change $= 4$.

Problem 3

1. A median $= (4+4)/2 = 4$; range $5-3=2$.
2. B median $= (4+5)/2 = \frac{9}{2}$; range $6-3=3$.
3. The ticks with dots in both plots are $3, 4, 5$; B also has a dot at 6, which A does not.

Problem 4

1. A median $= (4+5)/2 = \frac{9}{2}$; range $7-2=5$.
2. B median $= (7+8)/2 = \frac{15}{2}$; range $10-5=5$.
3. Median gap B minus A $= 3$; range change $= 0$.

Problem 5

1. A median $= (5+6)/2 = \frac{11}{2}$; range $7-4=3$.
2. B median $= (5+6)/2 = \frac{11}{2}$; range $13-4=9$.
3. Median gap B minus A $= 0$; range change $= 6$.

Problem 6

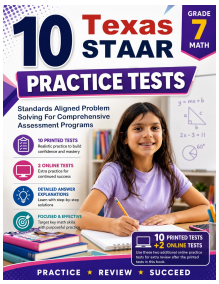
1. A median $= (7+7)/2 = 7$; range $8-6=2$.
2. B median $= (7+7)/2 = 7$; range $11-3=8$.
3. Median gap B minus A $= 0$; range change $= 6$.

TESTINAR

Keep Building Grade 7 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 7 books



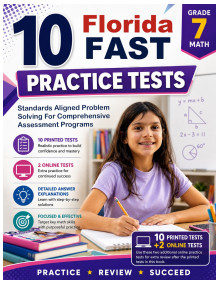
TEXAS STAAR

10 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook



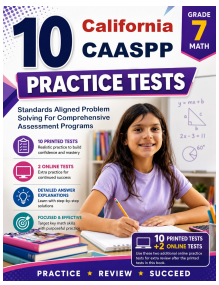
FLORIDA FAST

10 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook



CALIFORNIA CAASPP

10 Full-Length Math Practice Tests

Build Grade 7 accuracy, confidence, and test stamina with 10 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 7 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/7