



Comparative inferences about two populations

GRADE 7 MATH

Name _____

Date _____

Answer every item. State the gap in MADs before drawing any conclusion about the populations. One skill: **comparative inferences**.

WORKED EXAMPLE

Two random samples give means of 25 and 32 minutes, a gap of **7**. Before concluding anything about the two year groups, ask whether 7 is large **compared with the spread**. With a MAD of 1.6 the gap is **4.4 MADs** — far bigger than the natural wobble, so the populations really do differ. With a MAD of 8 the same gap is only **0.9 MADs**, which is no more than samples of one group differ among themselves.

1. Year A sample: 22, 24, 25, 26, 28 minutes. Year B sample: 30, 31, 32, 34, 33. Find both means and the gap.

APPLICATION

Show your thinking

Answer

2. Find the MAD of Year A and express the gap as a multiple of it. What can you conclude about the two year groups?

REASONING

Show your thinking

Answer

3. A different pair of samples has the same means of 25 and 32, but Year A is 10, 20, 25, 30, 40. Find its MAD and the gap in MADs.

APPLICATION

Show your thinking

Answer

4. The gap is 7 in both cases. Explain why the first supports a conclusion about the populations and the second does not.

REASONING

Show your thinking

Answer