LESSON MAKER PRO

Questions That Count

Ask questions that help make decisions from data.

HIGH SCHOOL · S.Q.1.2

S.Q.1.2 "Formulate meaningful statistical questions to clarify the problem at hand."

NAME _____ DATE _____

ASK, THEN MEASURE

A statistical question expects answers that vary across people or days. Name the group and what you will measure. Use the mean for a typical value and the range, largest minus smallest, for spread.

WORKED EXAMPLE

A school is reviewing its bike-rack hours. Write a statistical question about ride-time variation, then find the range.

BIKE RIDES

Student	Ride (min)
A	17
B	19
C	23

1. Ask about ride times for students, not one fixed ride.
2. Question: How many minutes does each student ride to school?
3. Range = 23 - 17 = 6 minutes.

Answer: How many minutes does each student ride to school? Range: 6 minutes.

PRACTICE 4 problems

1 A store reviews customer wait times (min): 4, 9, 12. Write a statistical question about wait-time variation. Find the range.

ANSWER _____

2 Smoothies sold on three school days: 2, 5, 8. Write a statistical question to help plan daily supplies. Find the mean.

ANSWER _____

3 Band members' practice times (min): 20, 25, 30. Write a statistical question about variation in practice time. Find the range.

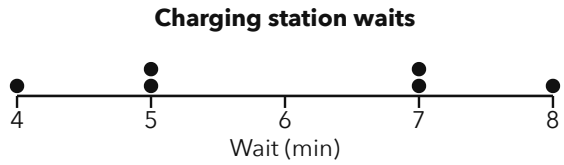
ANSWER _____

4 Homework times (min): 40, 50, 60. Write a statistical question to help set a study-hall length. Find the mean.

ANSWER _____

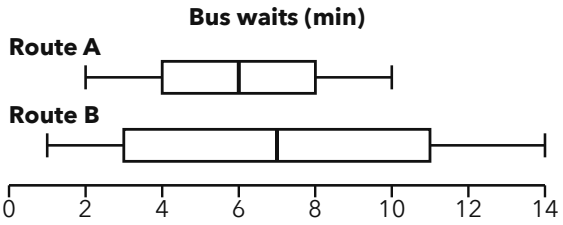
APPLY IT Show your work

1 The student council may add outlets to a charging station. The plot shows students' wait times in minutes. Write a statistical question that could help the council decide. Find the mean wait time.



ANSWER _____

2 Students can take either bus route. The plots show riders' wait times in minutes. Write a statistical question to help choose a route. Which route has the smaller range?



ANSWER _____

CHALLENGE One step up

A tutoring group wants a dependable start time. Session delays (min) were A: 1, 1, 7 and B: 2, 3, 4. Write a statistical question about dependability. Compare both means and ranges, then choose a schedule.

WORK SPACE AND ANSWER

ANSWER KEY

Questions That Count

HIGH SCHOOL · S.Q.1.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A store reviews customer wait times (min): 4, 9, 12. Write a statistical question about wait-time variation. Find the range.	**How many minutes do customers wait at this store? Range: 8 minutes.**
2	Smoothies sold on three school days: 2, 5, 8. Write a statistical question to help plan daily supplies. Find the mean.	**How many smoothies are sold each school day? Mean: 5 smoothies.**
3	Band members' practice times (min): 20, 25, 30. Write a statistical question about variation in practice time. Find the range.	**How many minutes does each band member practice? Range: 10 minutes.**
4	Homework times (min): 40, 50, 60. Write a statistical question to help set a study-hall length. Find the mean.	**How many minutes do students spend on homework? Mean: 50 minutes.**

PART 2 · APPLY IT

1. **How many minutes do students wait to use the charging station? Mean: 6 minutes.** The six waits total 36 minutes. Divide 36 by 6 to get a mean of 6 minutes.
2. **How many minutes do riders wait for each route? Route A has the smaller range.** Route A's range is 10 - 2 = 8 minutes. Route B's range is 14 - 1 = 13 minutes.

CHALLENGE

How much do session delays vary for each schedule? Both means are 3 minutes. A's range is 6 minutes, and B's range is 2 minutes. Choose B because its delays vary less.

Accept other questions that name the relevant group and a variable whose values can differ. For the challenge, accept schedule B when the student uses the smaller range to explain dependability.