

TOPIC: LEVELS OF MEASUREMENT

Levels of Measurement

- ◆ Recall: Data can be classified as qualitative or quantitative.
- You can also classify data by **Levels of Measurement**, which tell us what _____ make sense.

Levels of Measurement			
Level	Description	Qualitative or Quantitative	Example
Nominal	Categories, _____, or labels; No clear order; No calculations	[QUAL QUANT EITHER]	Hair color
Ordinal	Data can be arranged in _____; Differences can't be found or are meaningless	[QUAL QUANT EITHER]	Letter Grades, Jersey #s
Interval	_____ are meaningful; No clear starting point (or 0); Ratios are meaningless	[QUAL QUANT EITHER]	Daily Temperature
Ratio	There IS a clear _____ point (or 0); _____ are meaningful	[QUAL QUANT EITHER]	Heights, distances

EXAMPLE Identify the level of measurement of each of the following data sets.

(A) Participants give their favorite music genre from: Rock, Pop, Hip-hop, Jazz.	(B) Participants' total working hours are recorded.	(C) The birth years of participants are recorded (e.g., 1990, 1985, 2001, etc).	(D) Participants rate their satisfaction on a scale from 1 to 5.
[NOM ORD INT RAT]	[NOM ORD INT RAT]	[NOM ORD INT RAT]	[NOM ORD INT RAT]

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PRACTICE

Which level of measurement could describe both quantitative or qualitative data?

- A) Nominal
- B) Ordinal
- C) Interval
- D) Ratio

PRACTICE

For each data set determine if it is quantitative or qualitative & which level of measurement best applies.

(A) A hospital records the birth weights of newborns.	(B) Survey responses on participants' favorite menu item at a diner.	(C) Participants rate their symptoms as mild, moderate, or severe.	(D) The dates of establishment for different businesses are recorded.
[QUAL QUANT]	[QUAL QUANT]	[QUAL QUANT]	[QUAL QUANT]
[NOM ORD INT RAT]	[NOM ORD INT RAT]	[NOM ORD INT RAT]	[NOM ORD INT RAT]

EXAMPLE

A student records the temperature of water at multiple points throughout a science experiment. They notice the water was 40°F at the start of the experiment and 80°F at the end, so they say the water became twice as hot.

(A) What is the level of measurement of the data?

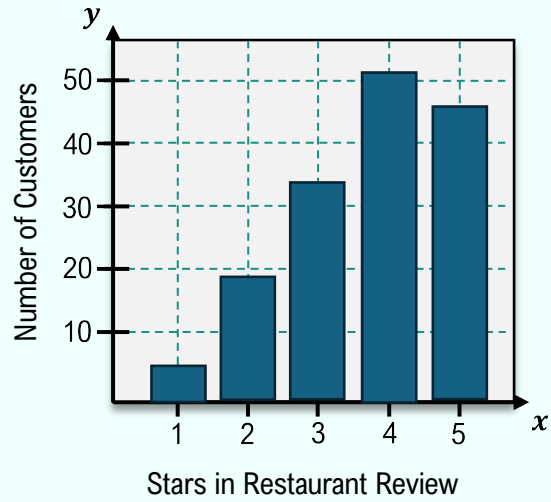
(B) Why does the calculation not make sense?

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EXAMPLE

Identify which level of measurement best describes the data on the x & y axes.

[NOM | ORD | INT | RAT]



[NOM | ORD | INT | RAT]