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DSC 520 Exercise 1

3) What is the level of measurement of the following variables?

-the number of downloads of different bands' songs on iTunes

Discrete ratio measure

-the names of the bands that were downloaded

Nominal variable

-the position in the iTunes download chart

Ordinal variable

-the money earned by the bands from the downloads

Continuous, ratio

-the weight of drugs bought by the bands with their royalties

Continuous, ratio

-the type of drugs bought by the bands with their royalties

Categorical, nominal

-the phone numbers that the bands obtained because of their fame

Categorical, nominal

-the gender of the people giving the bands their phone numbers

Categorical, binary

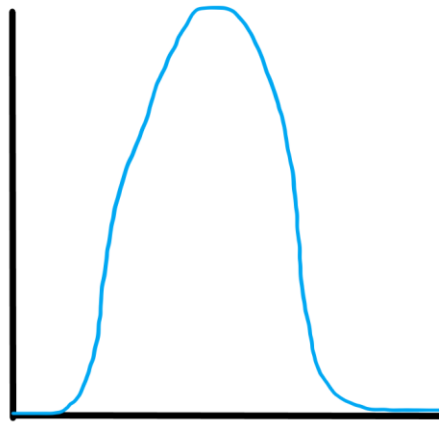-the instruments played by the band members

Categorical, nominal

-the time they spent learning to play their instruments
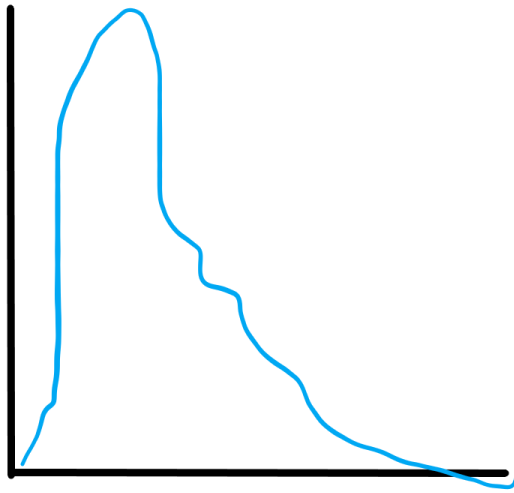
Continuous, ratio

4) Say I own 857 CDs. My friend has written a computer program that uses a webcam to scan the shelves in my house where I keep my CDs and measure how many I have. His program says that I have 863 CDs. Define measurement error. What is the measurement error in my friend's CD-counting device?

Measurement error is defined as the discrepancy between the numbers we use to represent the thing we're measuring and the actual value of the thing we're measuring or the value we would get if we could measure it directly. Since we know we have 857 CDs and the program says we have 863 CDs, the difference between those values is 6 CDs. Therefore, the measurement error is 6 CDs.
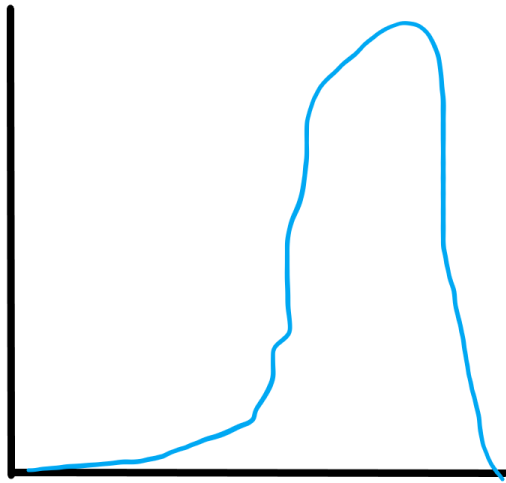
5) Sketch the shape of a normal distribution, a positively skewed distribution, and a negatively skewed distribution.

Normal Distribution

Positive Skew

Negative Skew