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Assignment 1.2
DSC520-T301
Dr. Bushart

Task 3:

a. The number of downloads of different bands' songs on iTunes.
   The number of songs downloaded can be 0 (no downloads) and it has to be a whole number because partial songs cannot be downloaded. This would mean that it is a discrete ratio variable.

b. The names of the bands that were downloaded.
   Categorical nominal variable. Names of bands represent different categories that do not have order.

c. The position in the iTunes download chart.
   Ordinal variable. It's a category where the order matters.

d. The money earned by the bands from the downloads.
   Continuous ratio variable, that is not discrete. Money can be counted in decimals and it can be zero.

e. The weight of drugs bought by the bands with their royalties.
   Continuous ratio variable. Not discrete. Weight can be measured in decimals and it can be zero.

f. The type of drugs bought by the bands with their royalties.
   Categorical nominal variable. Types of drugs have different categories, but the categories do not have order.

g. The phone numbers that the bands obtained because of their fame.
   Categorical and nominal. Numbers do not represent actual numbers and do not have order.

h. The gender of the people giving the bands their phone numbers.
   Categorical binary. Male or Female.

i. The instruments played by the band members.
   Categorical nominal. Instruments do not have order.

j. The time they had spent learning to play their instruments.
   Continuous ratio variable, not discrete. Time can be measured at an infinite level of precision.

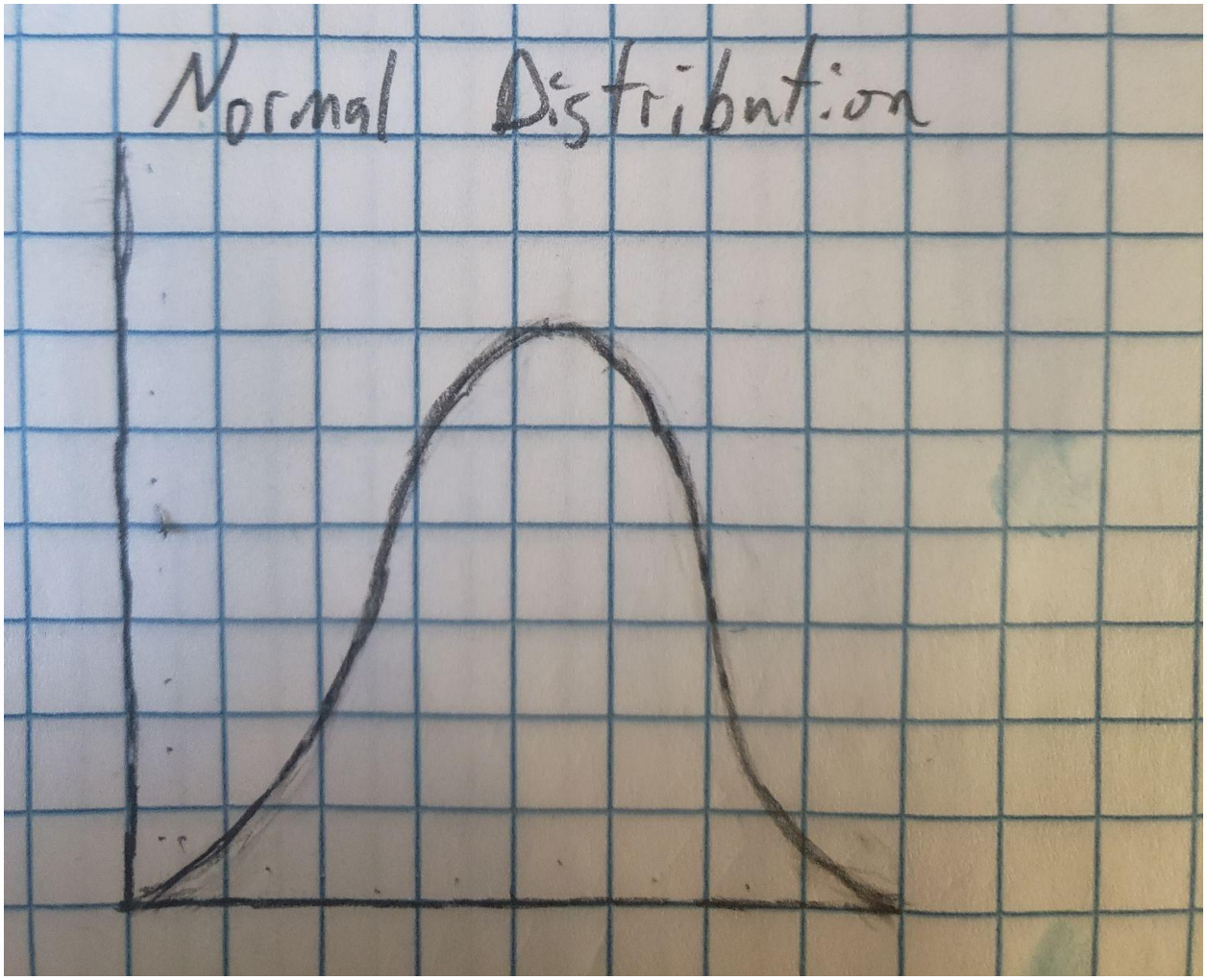
Task 4: Say I own 857 CDs. My friend has written a computer program that uses a webcam to scan the shelves in my house where I keep my CDs and measure how many I have. His program says that I have 863 CDs. Define measurement error. What is the measurement error in my friend's CD-counting device?

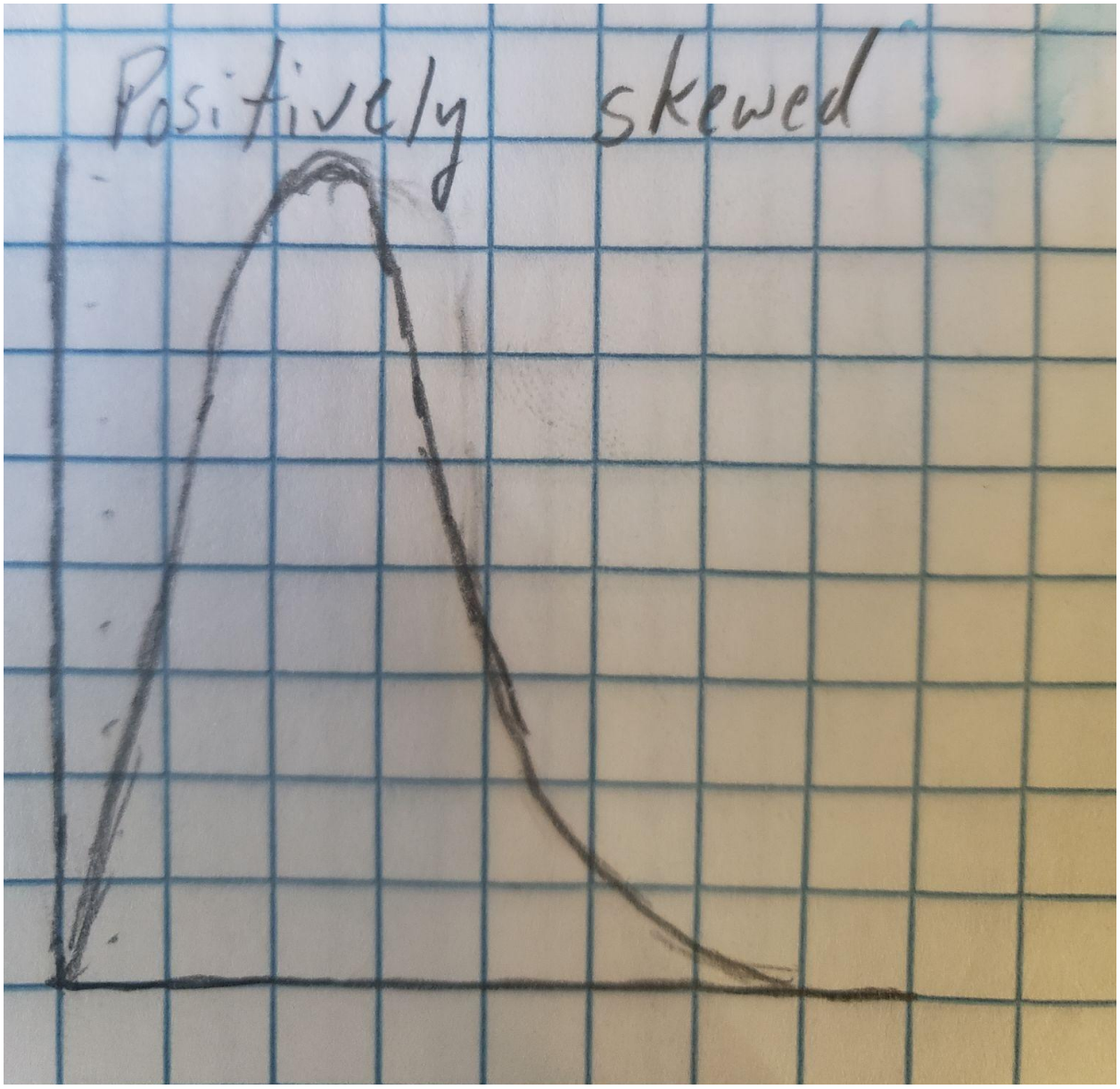
Measurement error is the discrepancy between the numbers we use to represent a thing and the actual value of the thing we're measuring. Measurement error is the difference between a measured quantity and its true value (Glen, 2020).

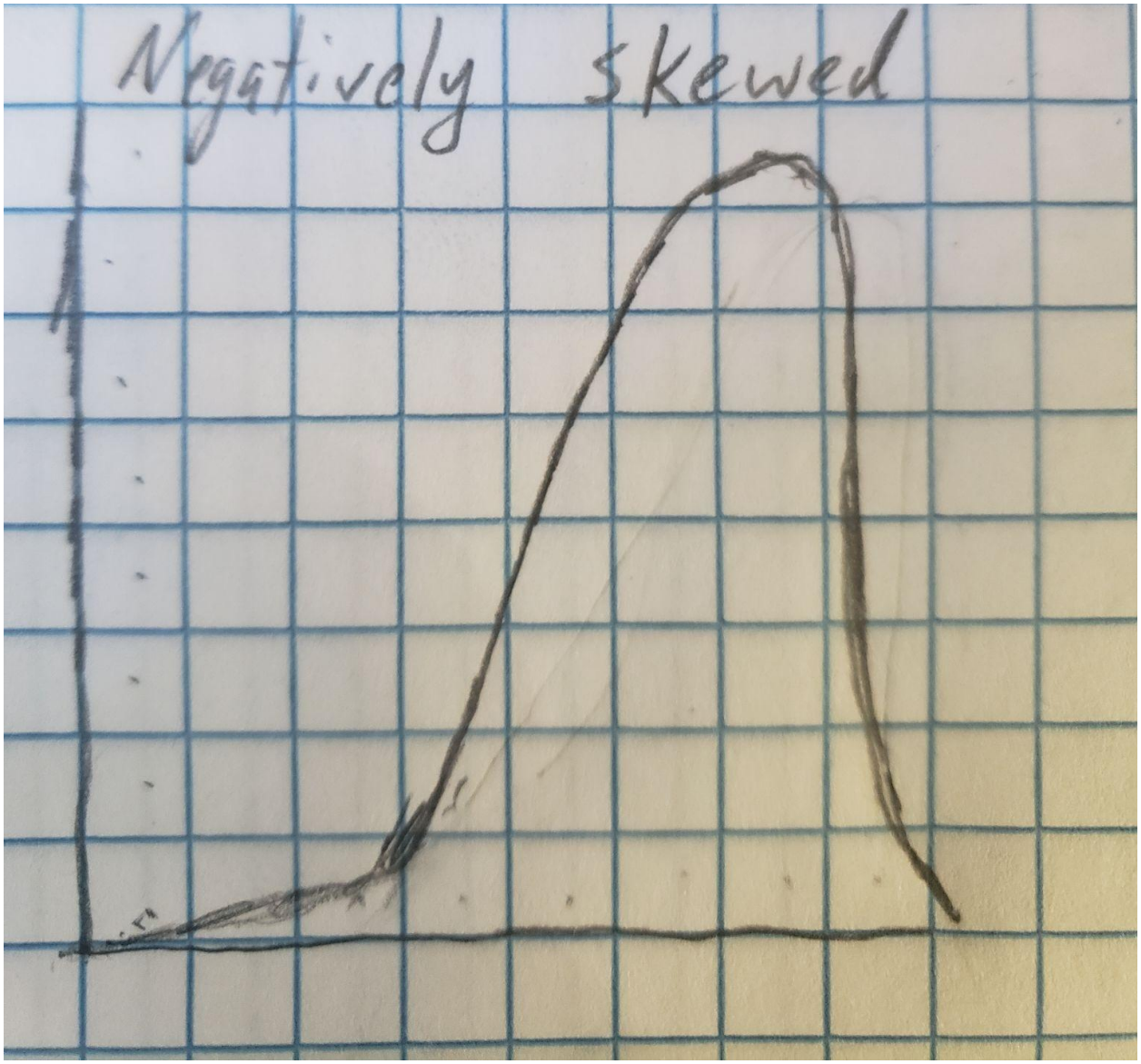
machine_count = 863
actual_count = 857
measurement_error = 863-857
measurement_error = 6

The measurement error of the CD-counting device is 6.

Task 5: Sketch the shape of a normal distribution, a positively skewed distribution and a negatively skewed distribution.


Normal Distribution


Positively skewed



References:
Glen, S. (2020, September 16). Measurement Error (Observational Error). Statistics How To. https://www.statisticshowto.com/measurement-error/.