

Quiz

Probability distribution

Random variable - numeric result of a random process.

Describes a results of random process and their probabilities.

Discrete: countable # of possible outcomes.

Continuous: Infinitely (not countable).

Probability Distribution:

Sum of all probabilities add up to 1.

Probabilities is always between 0 and 1,

$$0 \leq P(X) \leq 1$$

\underline{Ex}	Random variable	Probability	Reason
	0	$-\frac{1}{3}$	neg
	2	3	$P(X) > 1$
	3	$\frac{2}{3}$	✓

RV.	Prrob
-2	$\frac{1}{3}$
0	1
2	$-\frac{1}{3}$
<hr/>	
	1

Discrete Random Variables

	R.V	Prrob
(0,00) green	-5\$	$\frac{7}{38}$
Red	-5\$	$\frac{18}{38}$
black	\$5	$\frac{18}{38}$

Empirical Rule = Rule of thumb.

If you have a normal distribution, then,

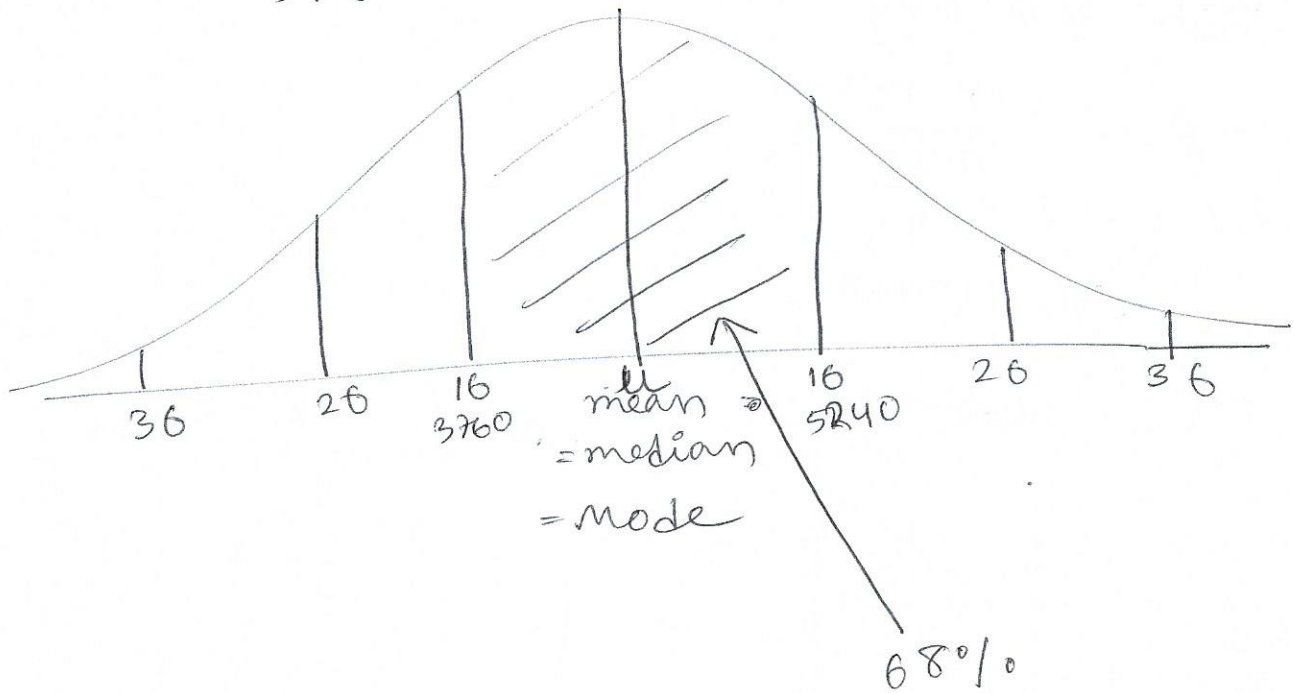
- approx 68% of data is within 1 sd of mean
- approx 95% of data is within 2 sd of mean.
- approx 99% of data is within 3 sd of mean.

~~$N(4500, 440)$~~

$N(4500, 740)$ = Normal distribution with μ , mean 4500 and σ , standard deviation 740.

68% of data

$(4500 - 740)$ to $(4500 + 740)$
3760 to 5240

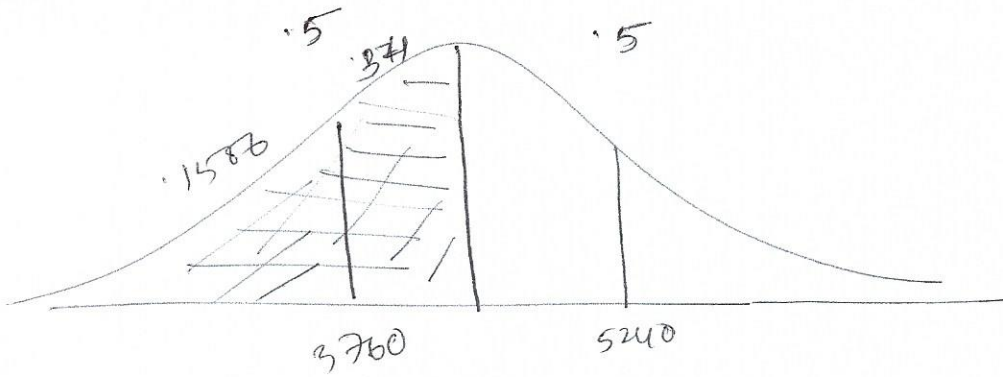


the standard Normal distribution is $N(0, 1)$

So has mean $\mu = 0$

sd $\sigma = 1$

$$z = \frac{x - \mu}{\sigma}$$



Area to left of 3760?

$$z = \frac{4500 - 3760}{740} = 1$$

~~0.371~~ 0.15866

