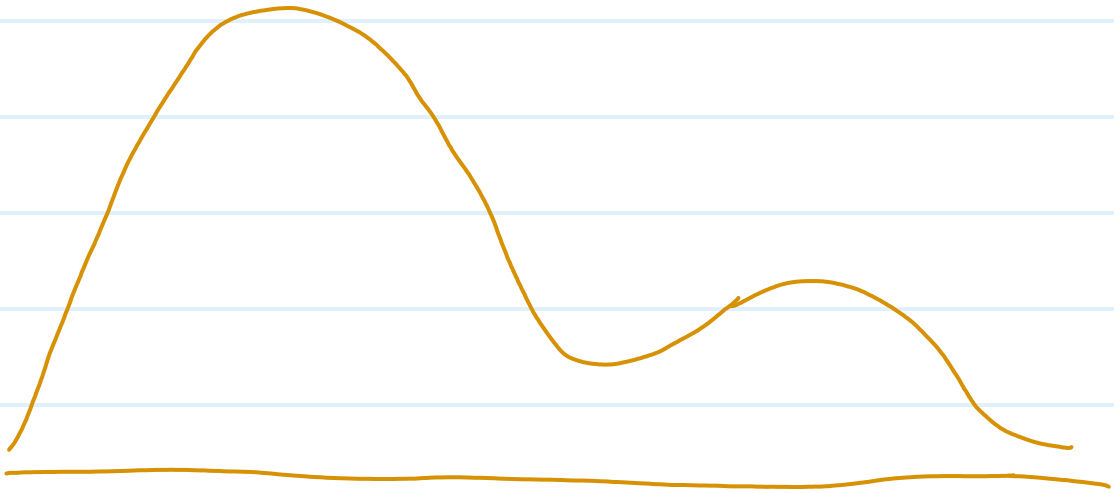
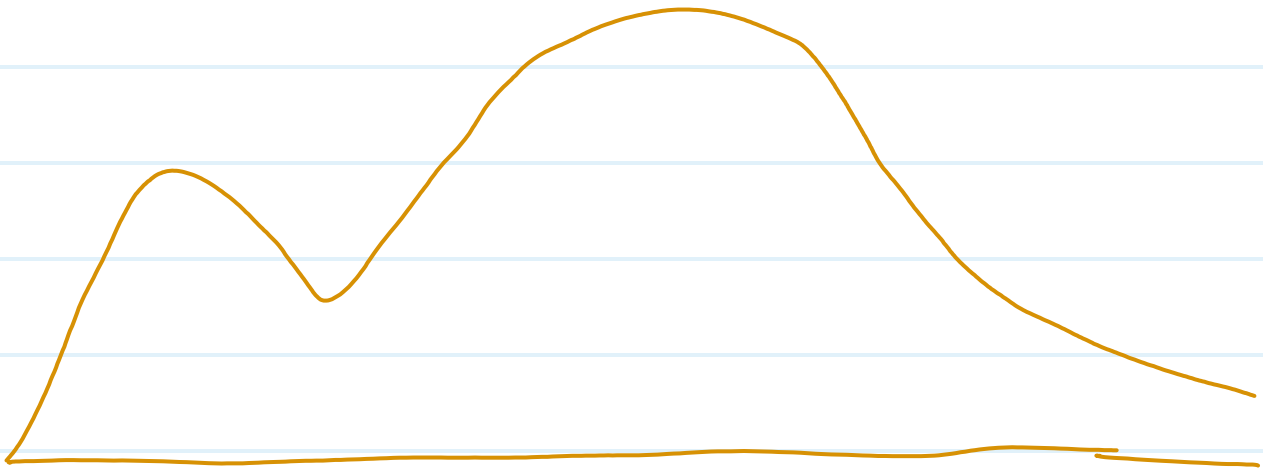
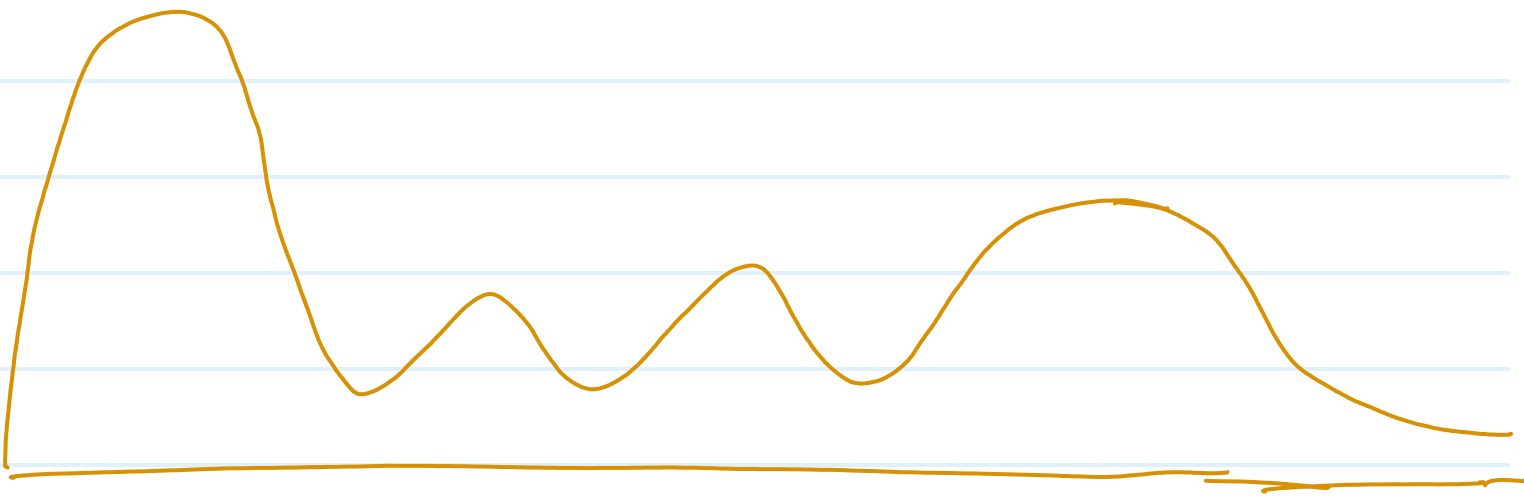
Center limit theorem

Population Distribution.







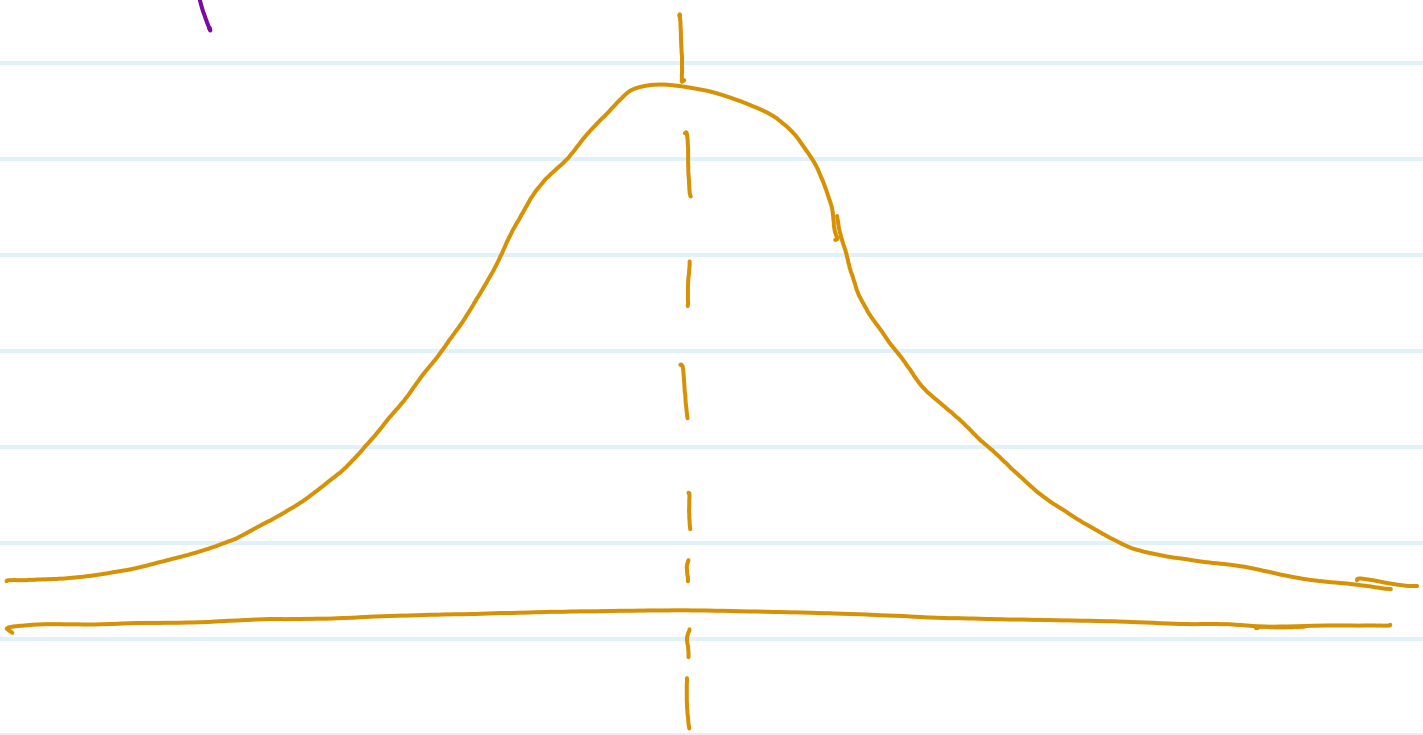
CLM Say if you collect sample from population with sample size ≥ 30.

Sample $(n) = n_1, n_2, n_3 \dots n_{40}$

sample size ≥ 30

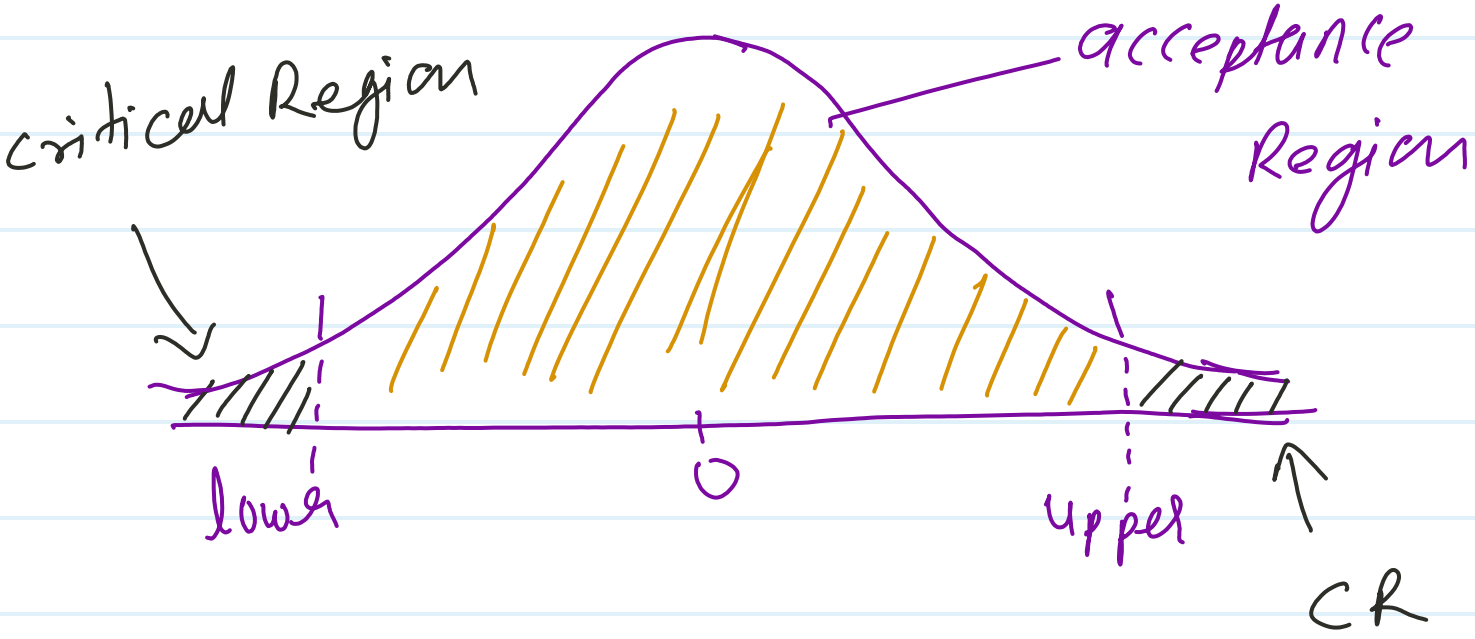
Sample mean $= \bar{x}_1, \bar{x}_2, \bar{x}_3 \dots \bar{x}_{40}$

eg. [11, 17, 21, 23, 26, 29, 32, 37]



Hypothesis testing

✱ Confidence interval -



H_0 (null hypothesis) It support always confidence Interval. (Acceptance Region)

H_1 (Alternet hypothesis) It support always critical Region.

H_0 - We fail to reject H_0

H_1 = we reject H_0, and accept H_1.

$N = 10000$

$\mu = 285$

$n = 40$

$\bar{x} = 140$

Two tail -

$\mu = \bar{x}$ = Null hypothesis

$\mu \neq \bar{x}$ = Alternet hypothesis.

α = Critical Regian

C.I = Acceptance Regian

P = It is probability of H_0 to be True.

$P = 0.15$

$\alpha = 0.05$

$P > \alpha$

↑

In this case we fail to reject null hypothesis.

$P < \alpha$

We reject null hypothesis and accept alternet hypothesis.

Type of hypothesis test

(I) Paramehic test

(II) Non-paramehic test

(1) Parametric test

(I) Z-test

(II) T-test

(III) Binomial test

(IV) poisson test

(V) exponential test

(2) Non-parametic test

(I) chi-square test

(II) Anova (f1)

{ Sample size < 30 or missing } T-test

{ Sample size ≥ 30 or given } Z-test.