Assignment 5

Q) There are 100k Employees. In the occasion of 100th anniversary of the company, the HR wants some shirts with Large (L) and XL. As a data analyst, I need some sample data. HR gives 500 data points. With this data, how much shirts should I order for the employees.

(300XL, 200 L)

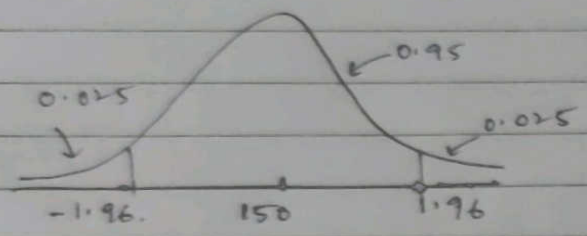
$\sigma = 100k$, $n = 500$, $\bar{x} = 250$

let $k = 1$. (300 XL + 200 L)

300 XL.

$\sigma = 100k$, $n = 300$, $\bar{x} = 150$.

$\alpha = 0.05$



$$C.I = 150 \pm 1.96 \times \frac{100}{\sqrt{300}}$$

C.I (lower limit)

$$= 150 - 1.96 \times \frac{100}{\sqrt{300}}$$

$$= 138.683$$

C.I (upper limit)

$$= 150 + 1.96 \times \frac{100}{\sqrt{300}}$$

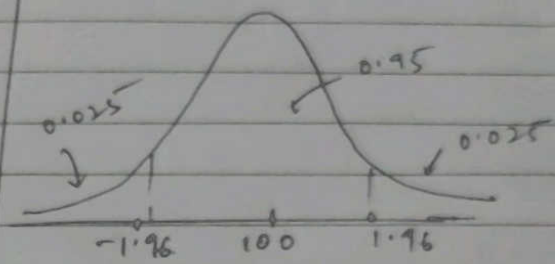
$$= 161.316$$

$C.I = [138.68 \longleftrightarrow 161.316]$.

XL shirts in the range.

200 L.

$\sigma = 100k$, $n = 200$, $\bar{x} = 100$.



$$C.I = 100 \pm 1.96 \times \frac{100}{\sqrt{200}}$$

C.I (lower limit)

$$= 100 - 1.96 \times \frac{100}{\sqrt{200}}$$

$$= 86.140.$$

C.I (upper limit)

$$= 100 + 1.96 \times \frac{100}{\sqrt{200}}$$

$$= 113.85$$

$C.I = [86.140 \longleftrightarrow 113.85]$.

L shirts in the range.