Assg-6

Special Assignment - 6
T-shirt

In a Company 1,00,000 Employees is there. Company wants to distribute to the T-shirt to the Employee. Sample 500. 300 members said XL, 200 member said L. How many XL, L, T-shirts you need to order ?

Ans:- $n = 500$, C.I = 95%, E = 10.

Assumption Percent

$\hat{p}$ for XL $= \frac{300}{500} = 60\%$

$\alpha = 1 - CI = 1 - 0.95 = 0.05$

$Z_{\frac{\alpha}{2}} = Z_{\frac{0.05}{2}} = Z_{0.025} = 1.96$

Lower Eqn:

Lower limit $= \bar{x} - z_{\alpha/2} \times \frac{\sigma}{\sqrt{n}}$

$= 60 - 1.96 \times \frac{10}{\sqrt{500}}$

$= 60 - 1.96 \times 0.447$

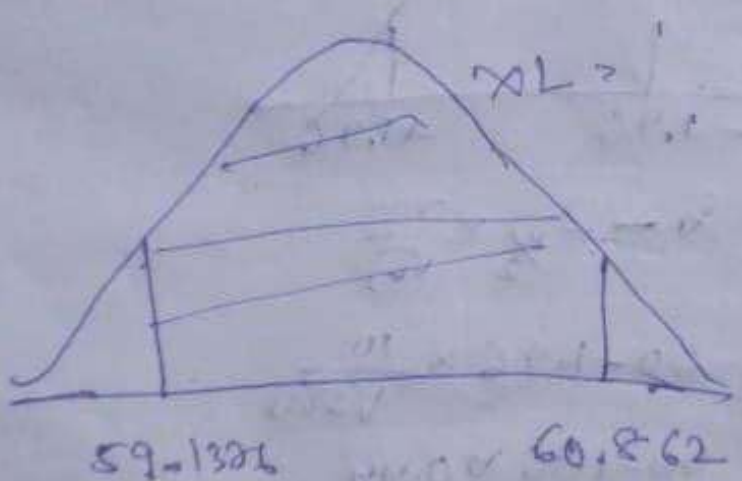
$= 59.1376$

Upper limit $= \bar{x} + z_{\alpha/2} \times \frac{\sigma}{\sqrt{n}}$

$= 60 + 1.96 \times \frac{10}{\sqrt{500}}$

$= 60 + 1.96 \times 0.447$

$= 60.8624$



∴ for 1,00,00 ps employed

59137 between 60.862 XL

T-shirts will need.

L - T.Shirt

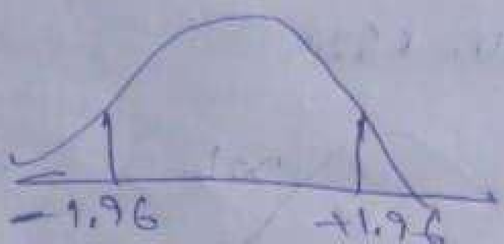
Q) $n = 500$, $\sigma = 10$, $C.I = .95$

$L\ \bar{x} = \frac{200}{500} = 0.4$

$\bar{x} = 40$

$\alpha = 1 - CI = 1 - 0.95 = 0.05$

$Z_{\alpha/2} = Z_{\frac{0.05}{2}} = Z_{0.025} = 1.96$



Lower ra: $\bar{x} - Z_{\alpha/2} \times \frac{\sigma}{\sqrt{n}}$

$= 40 - 1.96 \times \frac{10}{\sqrt{500}}$

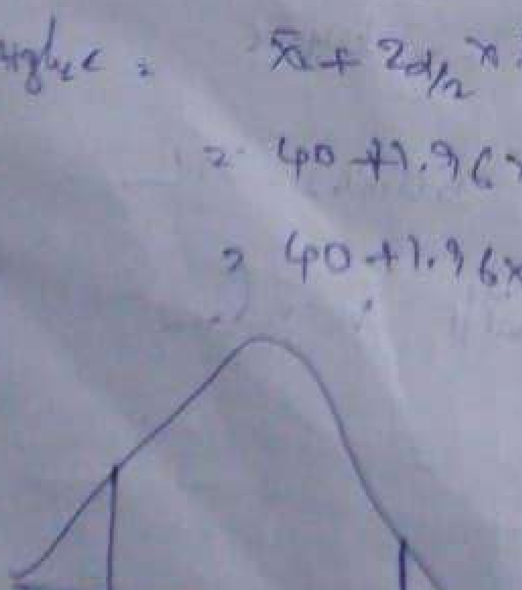
$= 40 - 1.96 \times 0.44$

$= 39.13$

Higher: $\bar{x} + Z_{\alpha/2} \times \frac{\sigma}{\sqrt{n}}$

$= 40 + 1.96 \times \frac{10}{\sqrt{500}}$

$= 40 + 1.96 \times 0.44 = 41.96$



L-T Shirts we need to order

39130 between

41960.