

## Assignment - 5

Let us assume for XL  $\rightarrow$  t-shirts

$$\bar{x} = 300, s = 100, n = 25 \mid df = 25 - 1$$

$$CI = 95\% \rightarrow \alpha = 0.05$$

$$\bar{x} \pm t_{\alpha/2} \left( \frac{s}{\sqrt{n}} \right)$$

$$t_{0.05/2} = t_{0.025} = 2.064$$

$$LF = \bar{x} - t_{0.05/2} \left( \frac{s}{\sqrt{n}} \right)$$

$$LF = 300 - 2.064 \left( \frac{100}{\sqrt{25}} \right)$$

$$= 300 - 2.064 \times \frac{100}{25}$$

$$= 300 - (2.064 \times 20)$$

$$= 300 - 41.28$$

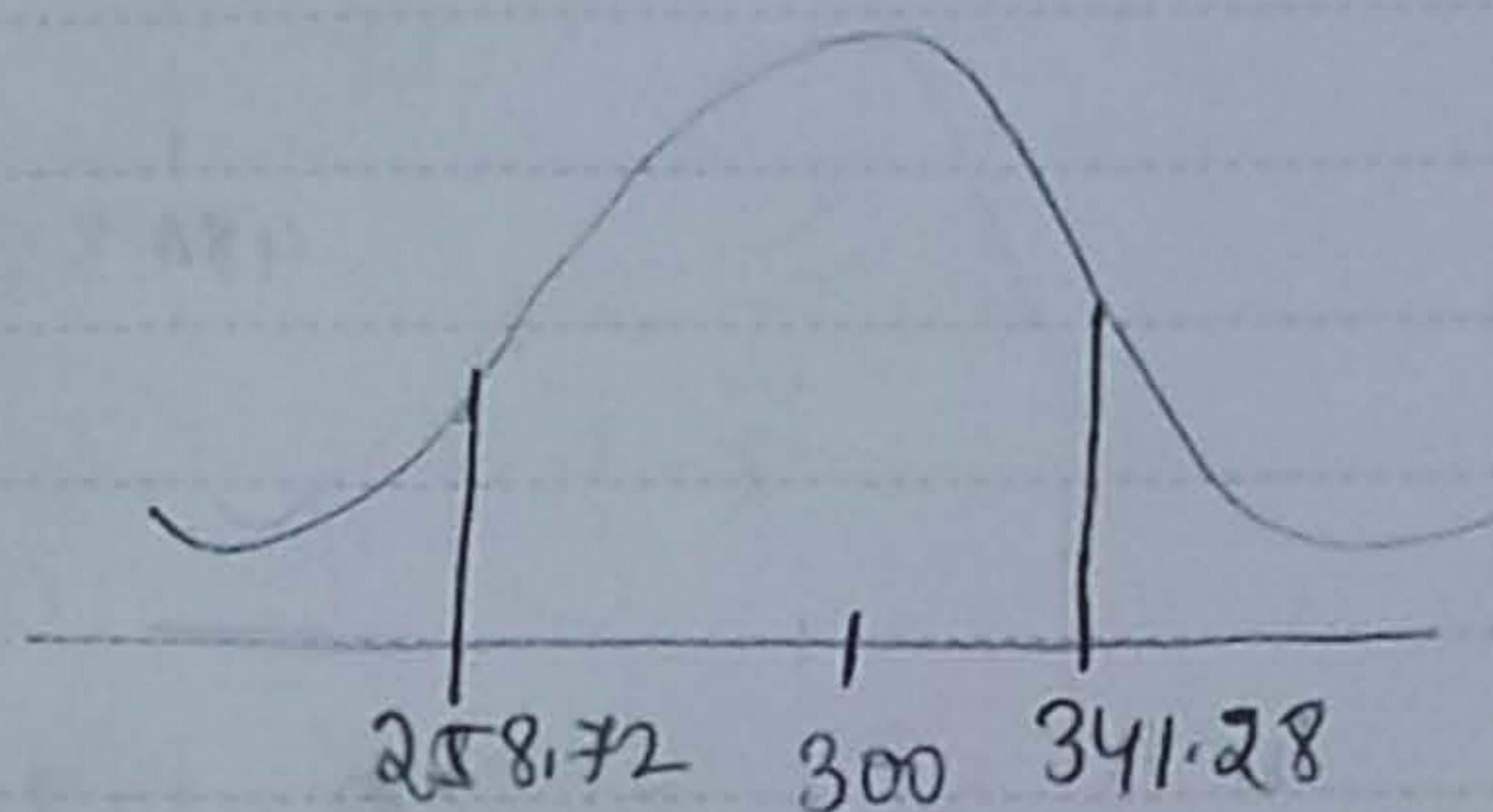
$$= 258.72$$

$$HF = \bar{x} + t_{0.05/2} \left( \frac{s}{\sqrt{n}} \right)$$

$$HF = 300 + 2.064 \times 20$$

$$= 300 + 41.28$$

$$= 341.28$$



Let us assume for L  $\rightarrow$  t-shirts

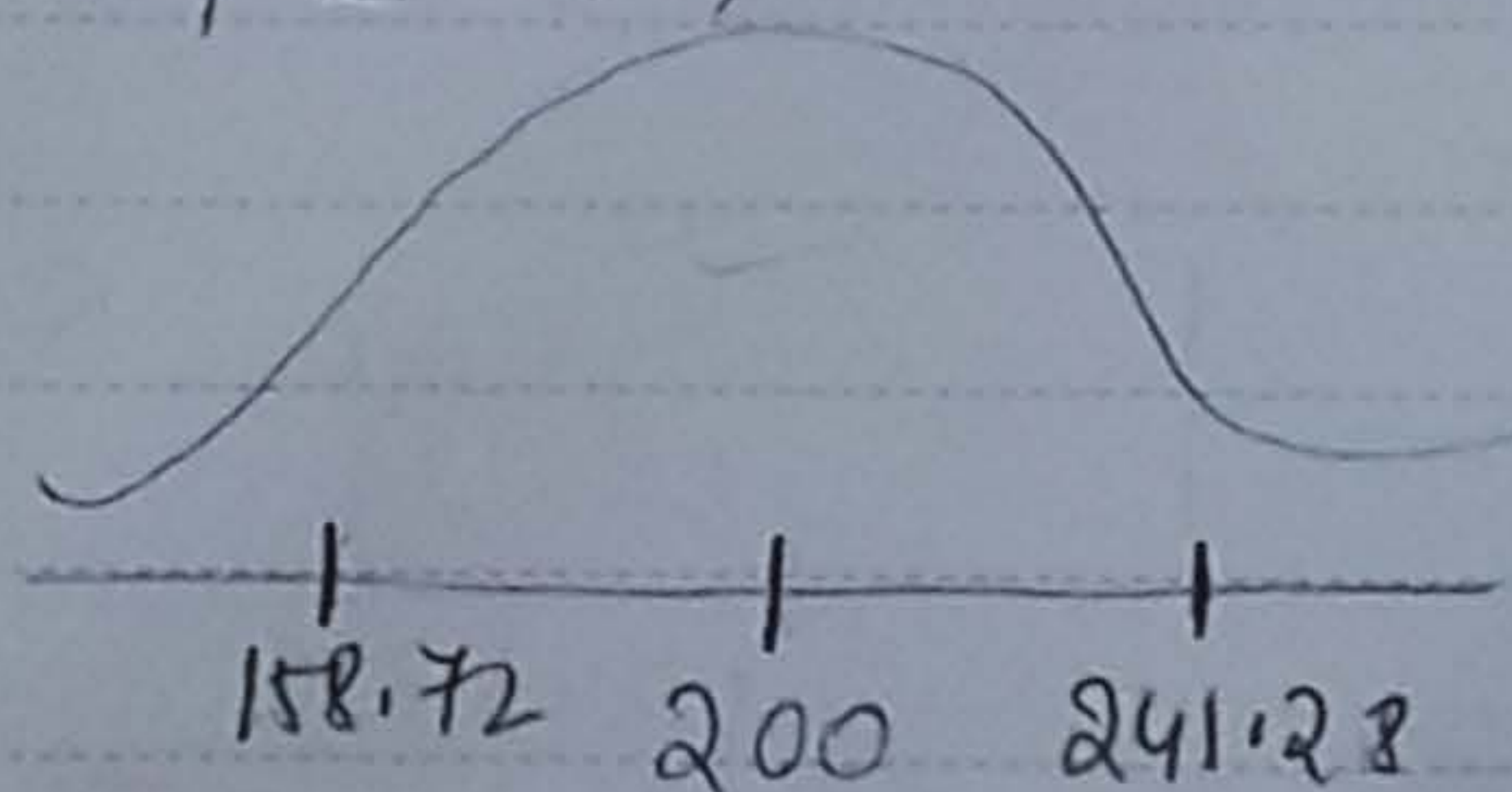
$$\bar{x} = 200, s = 100, n = 25 \mid df = 25 - 1 = 24 \mid CI = 95\% \rightarrow \alpha = 0.05$$

$$LF = \bar{x} - t_{0.05/2} \left( \frac{s}{\sqrt{n}} \right)$$

$$= 200 - (2.064 \times 20)$$

$$= 200 - 41.28$$

$$= 158.72$$



$$HF = \bar{x} + t_{0.05/2} \left( \frac{s}{\sqrt{n}} \right)$$

$$= 200 + (2.064 \times 20)$$

$$= 200 + 41.28$$

$$= 241.28$$

Hence, we can understand that XL t-shirts can be fitted b/w 250 - 342 employees whereas L t-shirts can be fitted b/w 158 - 242 employees over 100k employees of an organisation.