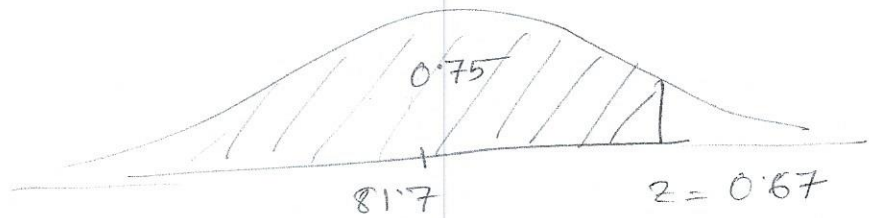


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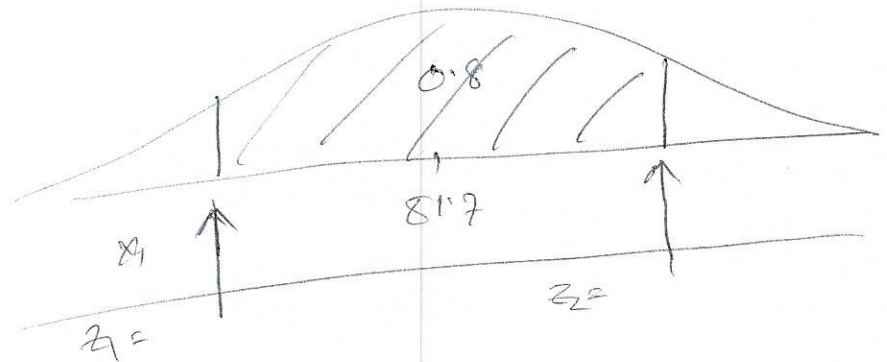
a)  $\mu = 81.7$   
 $\sigma = 6.9$

$$x = \mu + \sigma z$$

$$x = 81.7 + 6.9 \times 0.67$$



b)  $\mu = 81.7$   
 $\sigma = 6.9$

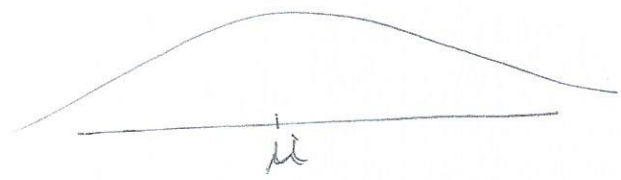


$$\text{tails} = \frac{1 - 0.8}{2} = 0.1$$

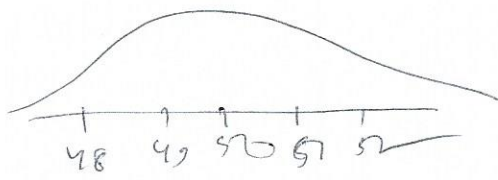
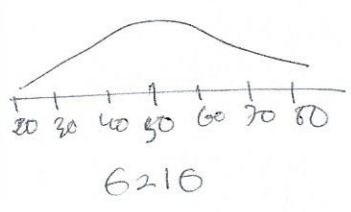
$$x_1 = 81.7 + (-1.28) * 6.9 = 72.9$$

$$x_2 = 81.7 + 1.28 * 6.9 = 90.5$$

# The central Limit Theorem



popn	Sample
$\mu$	$\mu_{\bar{x}}$
$\sigma$	$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}}$



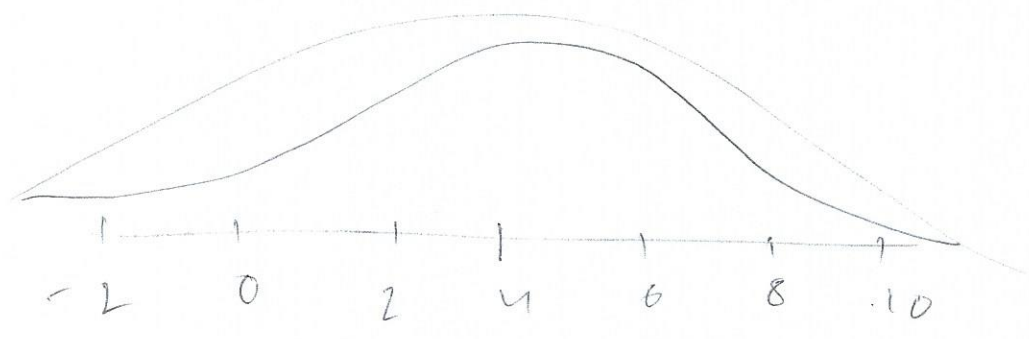
$$\sigma_{\bar{x}} = \frac{10}{\sqrt{100}} = 1$$

$$\mu_{\bar{x}} = 4$$

$$\mu_{\bar{x}} = 4$$

$$\sigma_{\bar{x}} = 1.5275$$

$$\sigma_{\bar{x}} = 2.1602$$



$$\mu = 800$$

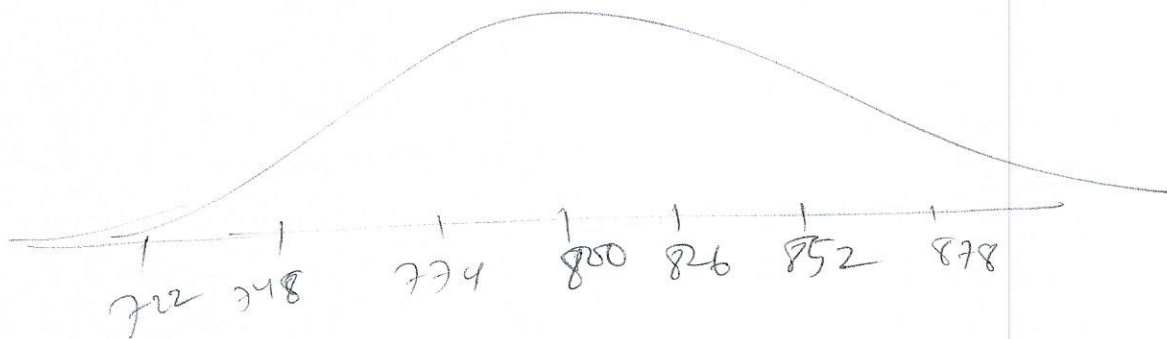
$$\sigma = 100$$

Sampling dist<sup>n</sup>

$$\mu_{\bar{x}} = 800$$

$$\sigma_{\bar{x}} = \frac{100}{\sqrt{15}}$$

$$n = 15$$



b) POP<sup>n</sup>

$$\mu = 53.0$$

$$\sigma = 38.5$$

Sampling dist<sup>n</sup>

$$\mu_{\bar{x}} = 53.0$$

$$\sigma_{\bar{x}} = \frac{38.5}{\sqrt{25}} = 7.7$$

$$n = 25$$

