

3. assume the random variable x is normally distributed with mean (wird character) $\mu=90$ and standard deviation $\sigma=4$ find the indicated probability

$P(78 < x < 88)$ (round to four decimal places as needed) please show your work

$$P(78 < x < 88) = P\left(\frac{78-90}{4} < \frac{x-90}{4} < \frac{88-90}{4}\right) = P\left(-3 < \frac{x-90}{4} < 0.5\right) = \text{by CLT (Central Limit Theorem) =}$$

$$F(-0.5) - F(-3) = F(3) - F(0.5) = 0.9986 - 0.6915$$

$$= 0.3071$$