

1. If $Y \sim N(1, 4)$ that is $E[Y] = 1$ and $\sigma_Y = 2$ calculate $\Pr(Y \leq 2)$ and $\Pr(1 \leq Y \leq 2)$
2. In a population $E[Y]=100$ and $\text{Var}(Y)=43$, use central limit theorem to answer the following questions
 - a. In a random sample of size $n=100$, find $\Pr(\bar{Y} < 101)$
 - b. In a random sample of size $n=64$, find $\Pr(101 < \bar{Y} < 103)$
 - c. In a random sample of size $n=100$, find $\Pr(\bar{Y} \geq 98)$