HW-3

1- If continuous random variable X has a mean μ=16, a variance σ^2=5, then find $P(X = 16)$.

2- Find the lower bound valued according to Chebyshev's theory for $P(\mu - 2\sigma < X < \mu + 2\sigma)$.

3- Consider the density function

$$f(x) = \begin{cases} k\sqrt{x}, & 0 < x < 1 \\ 0, & \text{elsewhere.} \end{cases}$$

- Find the value of k.
- Find the probability $P(0.3 < X \leq 0.6)$.
- The expected values and variance of X.

4- If continuous random variable X has a mean μ=16, a variance σ^2=5,
- find $P(X = 16)$
- find $E(X^2 + 1)$.
- find $Var(2x - 2)$