Problem 1:

True or False:

When taking an SRS from a population, a larger sample size will result in a larger standard deviation of the sample mean.
Problem 2:

True or False:

The central limit theorem states that for large $n$, the mean $\mu$ is approximately normal.
Problem 3:

Suppose the number of hours a college student sleeps is distributed N(8,1). Suppose you plan to take an SRS of size 100 and calculate the sample mean. What are the mean and standard deviation of this sample mean?
Problem 4:

Again, suppose the number of hours a college student sleeps is distributed $N(8,1)$, and you use an SRS of size 100 to calculate the sample mean. What is the probability that this sample mean is above 8.1 hours?
Problem 5:

Again, suppose the number of hours a college student sleeps is distributed $N(8,1)$, and you want to form a sample mean based on an SRS of size $n$. If you want to be 95% sure that the sample mean lies within 6 minutes of the true mean, how large should your sample size be?
Problem 6:

Suppose you flip a coin three times, and let $X$ denote the number of heads. Specify the probability distribution for $X$. 