1. Suppose the distribution of heights in a population is approximately normal. 10% of individuals are over 6 feet tall, and the average height is 5ft.6in. What is the probability that a randomly selected individual from this population is over 6ft. 1in. tall? Keep in mind that 1 ft is equal to 12 inches.

2. Suppose $X \sim N(0,1)$, $Y \sim N(0,9)$, and X and Y are independent. Find the mean, the variance and the third moment of $X + Y$

3. Normal approximation to binomial probabilities is routinely used in designing polls on an issue, for example polls to predict a winner in an election. Suppose that in an election there are two candidates, A and B, and among all voters, 52% support A and 48% support B. A poll of 1400 voters is done. What is the probability that the poll will predict a correct winner?