Assignment

~~1)~~ An archer hits a bull's-eye with a probability of 0.09, and the results of different attempts can be taken to be independent of each other. If the archer shoots nine arrows, calculate the probability that:

(a) Exactly two arrows score bull's-eyes.

(b) At least two arrows score bull's-eyes.

(c) What is the expected number of bull's-eyes scored?

(d) What is the variance and standard deviation of bull's-eyes scored?

~~2)~~ A company receives 60% of its orders over the Internet. Within a collection of 18 independently placed orders, what is the probability that
(a) between eight and ten of the orders are received over the Internet?
(b) no more than four of the orders are received over the Internet?

3) an archer hits a bull's-eye with a probability of 0.09, and the results of different attempts can be taken to be independent of each other.
(a) If the archer shoots a series of arrows, what is the probability that the *first* bull's-eye is scored with the fourth arrow?
(b) What is the probability that the *third* bull's-eye is scored with the tenth arrow?
(c) What is the expected number of arrows shot before the *first* bull's-eye is scored?
(d) What is the expected number of arrows shot before the *third* bull's-eye is scored?

4) The number of cracks in a ceramic tile has a Poisson distribution with a mean of $\lambda = 2.4$. What is the probability that a tile has no cracks? What is the probability that a tile has four or more cracks?

5) The thicknesses of glass sheets produced by a certain process are normally distributed with a mean of $\mu = 3.00$ mm and a standard deviation of $\sigma = 0.12$ mm.

(a) What is the probability that a glass sheet is thicker than 3.2 mm?

(b) What is the probability that a glass sheet is thinner than 2.7 mm?