I. It is believed that 15% of Americans do not have health insurance. Let the random variable X equal the number with no health insurance in a random sample of $n = 20$ Americans. Please answer the following. (10 points total)

(a) How is the random variable X distributed? You should also provide the p.m.f. and possible values for X . (4 points)

(b) Find $P(X > 8)$ (4 points)

(c) How many Americans do you expect (on average) to not have health insurance from a random sample of 20 Americans? (2 points)

II. According to a recent Gallup Poll, 80% of Americans approve of the job George Bush is doing as President. Suppose 15 Americans are selected at random. Let Y be the number of these Americans who approve of the job George Bush is doing. Please answer the following. (10 points total)

(a) How many Americans (on average) from the sample of 15 do you expect will approve of the job George Bush is doing? (2 points)

(b) Find $P(Y = 7)$ (4 points)

(c) Find the probability that at least seven Americans in the sample approve of the job George Bush is doing. (4 points)