Assume a binomial probability distribution with n = 40 and π = .55. Compute the following:
a. The mean and standard deviation of the random variable.
b. The probability that X is 25 or greater.
c. The probability that X is 15 or less.
d. Thr probability that X is between 15 and 25, inclusive.

Ex= $\sum_{i=0}^{40} i * C_{40}^{i} p^{\,i} * (1-p)^{40-i}$ =

$$\sum_{i=1}^{40} \frac{40!\, i\, 0.55^{i}\,(1-0.55)^{40-i}}{i!\,(40-i)!} = 22$$

Dx= $\sum_{i=0}^{40} i\hat{}2 * C_{40}^{i} p^{\,i} * (1-p)^{40-i}$ -22^2=493.9-484=9.9

standard deviation=d= $\sqrt{9.9}$ =3.14

b. The probability that X is 25 or greater.

P=$\sum_{i=25}^{40} C_{40}^{i} p^{\,i} * (1-p)^{40-i}$=0.214214

c. The probability that X is 15 or less

P=$\sum_{i=0}^{15} C_{40}^{i} p^{\,i} * (1-p)^{40-i}$= 0.0195775

d. Thr probability that X is between 15 and 25, inclusive.

P=$\sum_{i=15}^{25} C_{40}^{i} p^{\,i} * (1-p)^{40-i}$= 0.858791