work sheet # 3 ch 4

[1] The number of cancer patients visiting a small clinic on a given day is a discrete random variable X, with the following probability distribution:

no. of patients x	0	1	2	3	4
P(X=x)	0.1	0.2	0.4	0.2	0.1

a) verify that this is a valid probability distribution?

b) Find the Expected number of ~~part~~ patients visiting the clinic on a given day.

[2] Let X be discrete random variable with values 0, 1, and 2. If P(x=1) = 0.5 and E(x) = 1.2, then P(x=0) is .

[3] Given the following pdf of a random variable X

x	1	2	3
P(X=x)	0.2	0.4	y

Find the variance of the random variable X.

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[4] Let X be a Binomial Random variable with parameter n and P such that $E(x) = 8$ and $Var(x) = 4$ find n and P.

[5] In acertain clinical trial, a new drug is tested to prevent a specific disease. Previous studies suggest that the drug has a ~~50%~~ 50% success rate in preventing the disease. Suppos that the drug given to 15 patients.

a) what is the probability that ~~exactly~~ exactly 10 patients will be success fully protected from the disease?

b) what is the probability that at least 12 patients will protected.

c) what is the expected number of patients who will be protected from the disease.