

I. Let Y be a random variable and suppose that $E[Y + 3] = 9$ and $E[(Y + 3)^2] = 90$. Find each of the following (4 points each, 8 total):

(b) m_Y

(c) s_Y^2

II. According to a recent Gallup poll (October 23), 35% of Americans are “not too worried” that they or someone in their family will be exposed to anthrax. Let X be the number of people who are “not too worried” about anthrax exposure in a random sample of 20 Americans. Please answer the following. You may use any tables in the appendices of your text. (3 points each - 12 total)

(a) How is the random variable X distributed?

(b) Find the probability that X is equal to 11.

(c) Find the probability that X is at most 11.

(d) Find the probability that at least one person in this sample is “not too worried”.