Math 155 - Day #26 Expected Values - Beanboozled

Suppose you have a bucket containing 200 Jelly Beans. 150 of them are typical, delicious Jelly Beans. While the other 50 are Beanboozled (awful tasting) Jelly Beans. If you get a cup of 5 random jelly beans, find the probability of getting $0, 1, 2, \ldots, 5$ Beanboozled Beans.

P(0 Beanboozled) =

P(1 Beanboozled) =

$$P(2 \text{ Beanboozled}) = \frac{\overbrace{_{50}C_2}^{2 \text{ BB}} \times \overbrace{_{150}C_3}^{3 \text{ regular}}}{\underbrace{_{200}C_5}_{\text{any 5 from 200}}} = \frac{1225 \times 551300}{2535650040} \approx 26.6\%$$

P(3 Beanboozled) =

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P(4 Beanboozled) =

P(5 Beanboozled) =

What is the probability that you get at least 1 Beanboozled Jelly Bean?

What is the expected value on the number of Beanboozled Jelly Beans
you would get in a cup of 5?