

1. Mostly ok. A small point on the normal approximation to a discrete distribution:

Math 461
HW 9
Recap

Even though the maximum is $400 \cdot 17 = 6800$

which is 60% above the mean, we usually ignore this part.

In fact $1 - \Phi(60)$ is so small that Mathematica doesn't give you an easy way to calculate it. But $\phi(60) \approx \frac{1}{\sqrt{2\pi}} e^{-1800}$, which is tiny!

2. No real problems

3. For some mysterious reason, a number of people had .02N in the mix for their computations. It doesn't make sense. Please read the solutions.

4a. Lots of people tried to reverse-engineer this. There is no reason to think that if I ask $P(X \in A)$ and $P(Y \in A)$ that the behavior of $X+Y$ is at all relevant!

Please read the problems fresh each time and ask yourself: "What does the problem ask for, and how can I answer the questions based on what I know. Not which other problem does this sound like?"

4b. A number of people wrote this as a double integral, which they had Mathematica (correctly) evaluate. This is both true, and missing the point. The difference between two independent normal variables is also a normal random variable, and it's not too hard to evaluate the given question, if you read it correctly.