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1. (a) **Solution:**
The number of users should be a poisson distribution which is
$X \sim Poi(\lambda)$ where $\lambda = 5.5$
The probability that more than 7 users will sign-up for the social networking site in the next miniute is
$P(E) = 1 - P(E^c) = 1 - P\{X \leq 7\} = 1 - \sum_{i=0}^{7} \frac{e^{-5.5}5.5^i}{i!}$
Answer:
We can also use normal distribution to approximate the probability
$P\{X > 7\} = 1 - \Phi(\frac{7-5.5}{\sqrt{5.5}}) = 1 - 0.7389 = 0.2611$

(b) **Answer:**
The probability that more than 13 users will sign-up for the social networking site in the next 2 minute is
$P\{X > 13\} = 1 - P\{X \leq 13\} = 1 - \Phi(\frac{13-5.5\times 2}{\sqrt{5.5\times 2}}) = 1 - 0.7257 = 0.2743$

(c) **Answer:**
The probability that more than 15 users will sign-up for the social networking site in the next 3 minute is
$P\{X > 15\} = 1 - P\{X \leq 15\} = 1 - \Phi(\frac{15-5.5\times 3}{\sqrt{5.5\times 3}}) = \Phi(0.3693) = 0.6433$

2.

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I found there were some mistake in the question 12.b and updated my answers in the night of 5/3.