CSE21 Homework 7
Due: Friday, March 11 2005

This is an individual homework assignment. Please answer all questions to the best of your ability, showing all work. Please make sure that each problem is on a separate piece of paper, and that each piece of paper has your name and student ID number on it.

1. Let $X$ be a binomially distributed random variable, with mean 12 and variance 4.8. Find $P(X > 5)$ and $P(5 < X < 10)$.

2. Let $X$ be the binomial random variable $B(2, p)$. Let $Y$ be the binomial random variable $B(4, p)$. $P(X \geq 1) = \frac{8}{9}$. Find $P(Y \geq 1)$.

3. Let $Z$ be the random variable with the normal distribution with mean 0 and standard deviation $\sigma^2$. $k$ satisfies $P(|Z| \geq k) = 0.1$. Find $P(Z < k)$.

4. Suppose the grades of an examination is normally distributed with mean $\mu = 70$ and standard deviation $\sigma = 16$. The top 15 percent of the students receive $A$’s and the bottom 10 percent receive $F$’s. Find:

   (a) the minimum grade to receive an $A$.
   (b) the minimum grade to pass (not to receive $F$).

Please note this homework is due this Friday.