Quiz for Biostatistics session 2
July 5, 2001

1) Independent events are those which:
   a. Can never occur together
   b. Do not influence the probability of one another
   c. Always occur together
   d. Cover the entire sample space

2) Assume A is the event of having SBP $\geq$ 120 with P(A)=0.2, and B is the event of having DBP $\geq$ 90 with P(B)=0.15. Also assume that A and B are independent events.

   a. What is the probability of the intersection of A and B?
   b. What is the probability of the union of A and B?
   c. What is the conditional probability of B given that A occurred?

3) Explain the difference between a population and a sample. Why is the method of selecting items to be in your sample important?

4) Data for this question is in Table 6.9 (p.204) in Rosner. Provide point and interval estimates for the mean zone diameter of *E. coli* in common medium. Assume the confidence interval formula we've discussed is appropriate.

5) A question about the possible carcinogenic effects of a compound arises. In an accident, 264 men were exposed to the compound. After 1 year, none of the men were observed to have cancer. After 10 years, 24 of the men were observed to have cancer.

   a. Provide point and interval estimates of the proportion of exposed men with cancer by 1 year.
   b. Provide point and interval estimates of the proportion of exposed men with cancer by 10 years.