STATISTICS 101 - Homework 7

Not to be turned in

- Problems similar to these will appear on the third midterm scheduled for Wednesday, June 29th.

Problems:

1. Read pages 370 - 386 and starting on page 386 do exercises 2, 4, 10, 18, 20.
2. Read pages 389 - 404 and starting on page 404 do exercises 4, 6.
3. Doctors have long believed that certain vitamins, called antioxidants, help reduce the incidence of cancer. A group of doctors also believe that taking a multi-vitamin with antioxidants can prevent the occurrence of a second heart attack. To test their hypothesis, a random sample of 100 people who have suffered a first heart attack are selected to receive a daily multivitamin with an antioxidant. At the end of two years, 36 of the 100 people had suffered a second heart attack.
   (a) What is the sample proportion of people who had suffered a second heart attack?
   (b) Calculate a 95% confidence interval for the population proportion of people taking a multivitamin with an antioxidant who suffer a second heart attack.
   (c) Give an interpretation of the confidence interval you calculated from part (b).
   (d) It is believed that the population proportion of people suffering a second heart attack after surviving a first heart attack is 40%. Is their enough evidence to conclude that the population proportion of people taking a multivitamin with an antioxidant who suffer a second heart attack is less than 40%? Conduct the appropriate hypothesis test to determine the answer.