1. According to the US Census Bureau, in 2000 about 10.6% of adults aged 25 – 34 lived at home with their parents. Suppose you wish to test if this proportion has changed since then.   
   1. Define the parameter of interest, and write the null and alternative hypotheses associated with this test.

* 1. In a recent sample of 538 randomly selected adults (aged 25 – 34), 75 lived at home with their parents. Use this information to test the hypotheses from part a.

1. In the 2008 General Social Survey, people were asked their opinions on astrology – whether it was scientific, somewhat scientific, or not at all scientific. Of the 1438 randomly selected respondents, 74 said astrology was “very scientific”. Does this provide evidence that more than 5% of people believe astrology is very scientific?

1. A colonoscopy is a screening test for colon cancer, recommended as a routine test for adults over age 50. The proportion of people with colon polyps expected to die from colon cancer is 0.01. A random sample of 2602 people who had polyps removed during a colonoscopy were followed for 20 years, and 12 of died from colon cancer. Does this provide evidence that the proportion of people who die from colon cancer after having polyps removed in a colonoscopy is significantly less than the expected proportion (without a colonoscopy) of 0.01?   
   (This study was published in the *New England Journal of Medicine* in 2012.)