

Math 110
Quiz 1 Sample
January 25, 2009

Be sure to provide explanations for your answers as indicated.

1. The article “Do We Really Know What Makes Us Healthy?” by Gary Taubes in the New York Times from 7/16/07 concerns pitfalls in observational studies involving drugs. In particular, it discusses the following three confounders. Briefly explain two of the three.
 - (a) compliance or adherer effect
 - (b) prescriber effect
 - (c) eager patient effect

2. The following figures show histograms for the age distribution of the entire U.S. population in 2006 and the age distribution of uninsured people in the U.S. in 2006. The class intervals are less than 18 years old, 18 to 24 years old, 24 to 35 years old, 35 to 45 years old, 45 to 65 years old, and 65 to 100 years old. (Data is from the Current Population Survey of the US Census Bureau.)

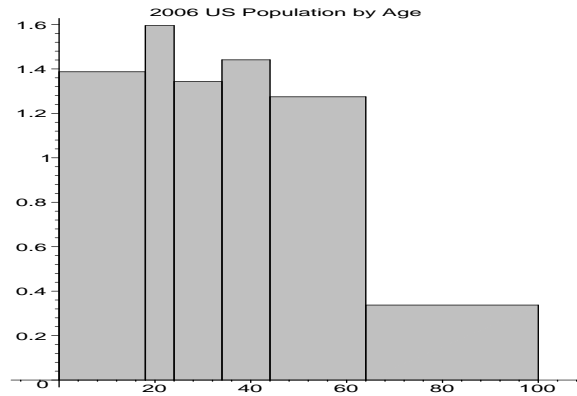


Figure 1: $N=296,824,000$ (approximately).

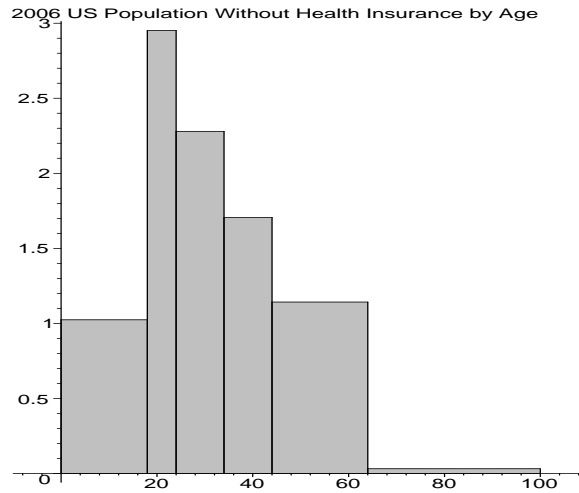


Figure 2: $N=46,915,000$ (approximately).

- (a) Use the first plot to approximate the number of people less than 18 years old in 2006 and the second plot to approximate the number of uninsured people less than 18 years old in 2006. Using this information, what percentage of people less than 18 years old were uninsured in 2006?
- (b) Based on the graphs, but without calculation, in which class interval is the percentage of uninsured people highest? Why might this be the case? (*Hint*: How do people obtain health insurance in this country?)