

**Quiz 5**

**Instructions:** This is an open book and open notes exam. Please write your answers on your own paper.

1. Three in five adults own an answering machine. A random sample of 12 adults is selected.
  - (a) Construct a binomial distribution.
  - (b) Graph the binomial distribution using a relative frequency histogram.
  - (c) Find the mean, variance, and standard deviation of the probability distribution.
  - (d) Find the probability that the number owning answering machines is exactly nine.
  - (e) Find the probability that the number owning answering machines is at least nine.
  
2. Find the indicated probability using the standard normal distribution. Hint: Sketch the standard normal curve and shade in the appropriate area(s) under the curve.
  - (a)  $P(Z < 1.43)$
  - (b)  $P(Z > -1.96)$
  - (c)  $P(-2.00 < Z < 2.00)$
  - (d)  $P(-0.96 < Z < 1.43)$
  - (e)  $P(Z < -2.95 \text{ or } Z > 0.76)$