1. \( z \) has the standard normal distribution. Find the probabilities below, using a calculator, writing down the calculator command line. Draw a diagram of the normal curve with appropriate shading in each part and endpoints labeled.

   (a) \( P( -1.34 \leq z \leq 0 ) \) (Draw a graph.)  
   (b) \( P( z \leq 1.34 ) \) (Draw a graph.)  
   (c) \( z_0 \), so that \( P( z \geq z_0 ) = 12.8\% \) (Draw a graph.)  
   (d) \( z_0 \), so that \( P( |z| \geq z_0 ) = 12.8\% \) (Draw a graph.)

2. Let \( X \) be the number of successes in \( n = 700 \) independent trials where the probability of success on each trial is \( p = 0.35 \). Find

   (a) the mean value of \( X \)  
   (b) the standard deviation of \( X \)  
   (c) \( P( 250 \leq X \leq 273 ) \) by using the binomial functions on the TI.  
   (d) \( P( 250 \leq X \leq 273 ) \) by using the normal approximation to the binomial.

3. The heights of trees in a forest have population mean is 2.65 m with a population standard deviation of 0.50 m. Find the probability that

   (a) one randomly chosen tree is under 2.60 m in height  
   (b) the sample mean in a random sample of 230 trees is less than 2.60 m.  
   (c) one randomly chosen tree is over 2.60 m in height  
   (d) the sample mean in a random sample of 230 trees is more than 2.60 m.

4. In a random sample of 80 cars, 14 have a satellite radio receiver. Find the 95% confidence interval for the percentage of cars with such a receiver. Show calculation of margin of error.

5. If the sample mean is 43 for a sample of size 120, and the sample standard deviation is 6.25, find the 94% confidence interval for the population mean. Give the endpoints accurate to six or more decimal places. Show the calculation of the margin of error.

6. Using a sample of size 12, the endpoints of a confidence interval for the population mean are given by \( \bar{x} \pm 1.547559765(s/\sqrt{12}) \).

   (a) What is the value of \( \alpha \)? (Can round to three decimal places.)  
   (b) What is the confidence level?

7. If the sample mean is 41, for a sample of size 14, and the sample standard deviation is 4.5, find the 97% confidence interval for the population mean. (The population is normally distributed. Show calculation of margin of error.)

8. The margin of error of the estimate is to be 0.08 in a 95% confidence interval for the proportion. What should the minimum sample size be? (Assume no estimate of \( p \) or \( q \).)

9. The weights of 31 loaves of bread are measured. The sample standard deviation is 0.65 ounces. Find the 98% confidence interval for the population standard deviation, including the calculation of the critical values.