MATH 140 WORKSHEET VI FALL 2011 REVISED 2013

1A. Suppose Farmer McLoughlin is concerned about the cost to produce a bushel of pole beans crop. Suppose (a huge assumption) that the true population is normally distributed with a mean for the cost to produce a bushel of pole beans is \$3.25 and the true standard deviation is \$0.45. What is the approximate probability that it will cost him per bushel to produce his pole beans is between \$3.30 and \$3.45?

1B. Suppose farmers in Berks County are concerned about the cost to produce a bushel of pole beans crop. Suppose (a huge assumption) that the true population is normally distributed with a mean for the cost to produce a bushel of pole beans is \$3.25 and the true standard deviation is \$0.45. What is the approximate probability that it will cost a farmer to produce an average 25 bushel crop of pole beans between \$3.30 and \$3.45?

2. Suppose Farmer McLoughlin is concerned about the cost to produce a bushel of pole beans crop. Suppose (a huge assumption) that the true population is normally distributed with a mean for the cost to produce a bushel of pole beans is \$3.25 and the true standard deviation is \$0.45. What is the approximate probability that it will cost him per bushel to produce his pole beans is between \$3.00 and \$3.30 or is exactly \$3.00 or is exactly \$3.30?

3A. Suppose Farmer McLoughlin is concerned about the price a bushel of pole beans crop will sell for and hope to earn enough to make a profit. Suppose (a huge assumption) the true population is normally distributed with a mean for the sale price of a bushel of pole beans is \$4.50 and the true standard deviation is \$0.60). What is the approximate probability that he can sell his crop for \$5.00 or more?

3B. Suppose farmers in Berks County are concerned about the price a bushel of pole beans crop will sell for and hope to earn enough to make a profit. Suppose (a huge assumption) the true population is normally distributed with a mean for the sale price of a bushel of pole beans is \$4.50 and the true standard deviation is \$0.60). What is the approximate probability that a farmer can sell an average 25 bushel crop of pole beans for \$5.00 or more?

4. Suppose we select a random sample of 40 pole beans farmers in the Kutztown area and record the amount (X_i for $i \in \mathbb{N}_{40}$) that it costs per bushel to produce their crop. Suppose (a huge assumption) that the true population is normally distributed with a mean for the cost to produce a bushel of pole beans is \$3.25 and the true standard deviation is \$0.45. What is the approximate probability that the average production cost per bushel in the sample will be between \$3.30 and \$3.45?