

Math 221: Basic Statistics Homework Assignment #4A**Due Week #13**

Title: Computing Probabilities For Normally Distributed Samples

Objectives:

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 4.91 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.31 ounces?
- (3) 71% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 72% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.51 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 62% of the sample means fall?
- (7) 71% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4B**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 4.93 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.33 ounces?
- (3) 73% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 74% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.53 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 64% of the sample means fall?
- (7) 73% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4C**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 4.95 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.35 ounces?
- (3) 75% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 76% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.55 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 66% of the sample means fall?
- (7) 75% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4D**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 4.97 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.37 ounces?
- (3) 77% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 78% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.57 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 68% of the sample means fall?
- (7) 77% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4E**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 4.99 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.39 ounces?
- (3) 79% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 80% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.59 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 70% of the sample means fall?
- (7) 79% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4F**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 5.01 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.41 ounces?
- (3) 81% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 82% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.61 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 72% of the sample means fall?
- (7) 81% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4G**Due Week #13**

Title: Computing Probabilities For Normally Distributed Samples

Objectives:

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 5.03 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.43 ounces?
- (3) 83% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 84% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.63 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 74% of the sample means fall?
- (7) 83% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4H**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 5.05 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.45 ounces?
- (3) 85% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 86% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.65 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 76% of the sample means fall?
- (7) 85% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4I**Due Week #13****Title:** Computing Probabilities For Normally Distributed Samples**Objectives:**

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 5.07 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.47 ounces?
- (3) 87% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 88% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.67 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 78% of the sample means fall?
- (7) 87% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.

Math 221: Basic Statistics Homework Assignment #4J**Due Week #13**

Title: Computing Probabilities For Normally Distributed Samples

Objectives:

- To calculate probabilities for a sample from a normally distributed population using Excel functions and formulas.

Directions

- The instructions on p. 294 in our text or in EH.5.1 (pp. 274-6) in **Statistics for Managers** by Levine, et al., may help you complete the calculations for this lab.
- Supply all of your answers to this lab on an Excel spreadsheet that includes your name, course number and section, and data set letter.
- The Excel functions that you might use to complete this lab include NORMDIST and NORMINV.

An orange juice producer buys all his oranges from a large orange orchard. The amount of juice squeezed from each of these oranges is approximately normally distributed with a mean of 4.70 ounces and a standard deviation of 0.40 ounces.

- (1) What is the probability that a randomly selected orange will contain between 4.70 and 5.09 ounces?
- (2) What is the probability that a randomly selected orange will contain between 5.00 and 5.49 ounces?
- (3) 89% of the oranges will contain at least how many ounces of juice?
- (4) Between what two values symmetrically distributed around the population mean will 90% of the oranges fall?

Suppose that a sample of 25 oranges is selected:

- (5) What is the probability that the sample mean will be at least 4.69 ounces?
- (6) Between what two values symmetrically distributed around the population mean will 80% of the sample means fall?
- (7) 89% of the sample means will be above what value?
- (8) Are the results in parts (7) and (3) different? Explain why.