

Name:

## Project 5: Students' Heights

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Please use the following to answer the questions for Project 4. Make sure to answer the questions in complete sentences with proper grammar and spelling. This document should be saved as a PDF before submitting online.

### Questions for Task 1:

Double click where it says "Name:" at the top of this document and type your name there.

- A) Is this data numerical or categorical? If it is numerical, is it discrete data or continuous data?
  
- B) What is the formula you used in cell **C97** to calculate the z-scores?
  
- C) Answer the following questions about the z-score in cell **C64**:
  - i. The value is:
  
  - ii. Write a sentence about how we can interpret this value as a z-score.
  
  - iii. Write a sentence about how we can interpret this value in context of the problem.
  
  - iv. Using the Table on Pages C-1 and C-2 of the book calculate the probability that a randomly chosen female student from the classes is **shorter** than the woman whose height is in cell B64.

Name:

D) Answer the following questions about the z-score in cell **C40**:

- i. The value is:
- ii. Write a sentence about how we can interpret this value as a z-score.
- iii. Write a sentence about how we can interpret this value in context of the problem.
- iv. Using the Table on Pages C-1 and C-2 of the book calculate the probability that a randomly chosen female student from the classes is **taller** than the woman whose height is in cell B40.

E) Answer the following questions about the z-score in cell **C24**:

- i. The value is:
- ii. Write a sentence about how we can interpret this value as a z-score.
- iii. Write a sentence about how we can interpret this value in context of the problem.
- iv. Using the Table on Pages C-1 and C-2 of the book calculate the probability that a randomly chosen female student from the classes is **taller** than the woman whose height is in cell B24.

Name:

- F) What is the probability that a randomly selected female student from the classes has a height between the values in cells **B8** and **B89**? Write a sentence that explains what this means in context of the problem.

### Questions for Task 2:

- A) Copy and Paste your Frequency Table here and Relative Frequency table here.  
You can leave it as a single table with three columns.

Name:

B) Copy and Paste your Histogram here.

C) Write a sentence that explains, based on the histogram, how you know the data is approximately normally distributed. (Hint: Use the empirical rule).

Name:

D) Based on your histogram what is the probability that a randomly chosen female student has a z-score between  $-2$  and  $-1$  standard deviations below the mean? Write a sentence that explains what this means in context of the problem.

E) Based on your histogram, what is the probability that a randomly chosen student does NOT have a z-score between 1 to 2? Write a sentence that explains what this means in context of the problem.

F) Based on your histogram, what is the probability that a randomly chosen student has a z-score in the range  $-3$  to  $-2$  OR in the range 2 to 3? Write a sentence that explains what this means in context of the problem. (Answer on page 5)

G) Based on your histogram, what is the probability that a randomly chosen student has a z-score in the range 2 to 3 AND in the range  $-1$  to 0? Write a sentence that explains what this means in context of the data. (Answer on page 5)