

DUE SEPTEMBER 4, 2024

2023 AP STATISTICS SUMMER PACKET

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NORTH PLAINFIELD HIGH SCHOOL

YOUR NAME: _____ GRADE: $\frac{(\% \text{ COMPLETE} + \% \text{ CORRECT})}{2} =$ _____

DEAR STUDENT,

The purpose of the summer packet is to make sure you are prepared with the prerequisite skills necessary to be successful in your AP Statistics course.

Page 2 of this packet lists the skills and shows the rubric your teacher will use to grade your packet. Make sure you read both carefully so that you start off the year on the right foot.

Follow these guidelines while completing the assignment:

- You will not receive credit unless you **SHOW YOUR WORK!**
- Do **NOT** use a calculator! The purpose of the packet is to sharpen your skills, not how to use a calculator.
- If you do not remember how to solve a problem, go to Khan Academy (<https://www.khanacademy.org/>) and watch a lesson on the topic.
- A great website to practice math skills <https://www.ixl.com/signin/nplainfield>.
- Resource of information: <https://stattrek.com/>
- [Statistics Crash Course](#) : Youtube - Crash Course Statistics

This packet is due to your math teacher on **September 4, 2024**. If it is turned in late, you will lose points as noted in the grading rubric. If it is not turned in by Friday, September 6th, you will receive a 0 for your first quiz score in math. **DO NOT LET THIS HAPPEN!** You have all summer to do this assignment!

If you need a paper copy of this packet, they are available in the NPBS central office during summer hours (Monday-Thursday 8am - 12pm and 1pm - 2pm).

LAUREN HECKENDORF
MATH SUPERVISOR, K-12
NORTH PLAINFIELD HIGH SCHOOL

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Skills in this packet

- [What is Statistics?](#)
- [Stemplots](#)
- [Histograms](#)
- [Measures of Center](#)
- [Boxplots](#)
- [Standard Deviation](#)
- [Two-Way Tables](#)
- [Simpson's Paradox](#)

Grading rubric: 100 point quiz grade (your first grade of the year in math!!)

Your score will be graded using this formula: $\frac{(\% \text{ complete} + \% \text{ correct})}{2}$

The completion percent only includes problems with all work shown. An additional 10 points will be deducted for each day your packet is late.

THIS IS AN IMPORTANT ASSIGNMENT. BE SMART and start off your year with your best effort!!!

Special Cases:

- If you are absent in the first 3 days of school, you are allowed 1 day per day absent to turn in your assignment.
- If you start NPHS in September, you have 2 weeks after your first day in school to turn this packet into your math teacher.
- If you transfer from one course to another in September, your summer packet score from your original class will transfer with you.
- If you start NPHS after September, you are exempt from completing this packet.

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Submit:**Chapter 1:** Answer the following questions on pages 10-12: 1, 5, 8, 11, 13, 14, 17**Chapter 2:** Answer the following questions on pages 34-36: 5-15 all**Chapter 3:** Answer the following questions on pages 72-81: 7,11,18,20, 23,28,29,31**Notes:** Use the outlines as notes for each of the chapters: This portion will not be collected.*Stats: Modeling the World - Bock, Velleman, & DeVeaux***Chapter 1: Stats Starts Here****Key Vocabulary:**

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> ▪ Statistics ▪ data, datum ▪ variation ▪ individual ▪ respondent | <ul style="list-style-type: none"> ▪ subject ▪ participant ▪ experimental unit ▪ observation ▪ variable | <ul style="list-style-type: none"> ▪ categorical ▪ quantitative |
|--|--|---|

Calculator Skills:

- | | | |
|--|--|--|
| <ul style="list-style-type: none"> ▪ enter data in a list ▪ change a datum | <ul style="list-style-type: none"> ▪ delete a datum ▪ name a new list ▪ clear a list ▪ delete a list | <ul style="list-style-type: none"> ▪ recreate a list ▪ copy a list |
|--|--|--|

1. Name three things you learned about *Statistics* in Chapter 1.
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2. The authors claim that this book is very different from a typical mathematics textbook. Would you agree or disagree, based on what you read in Chapter 1? Explain.
3. According to the authors, what are the “three simple steps to doing *Statistics* right?”
4. What do the authors refer to as the “W’s of data?”
5. Why must data be in context (the W’s)?
6. Explain the difference between a *categorical variable* and a *quantitative variable*. Give

an example of each.

Displaying and Describing Categorical Data

Key Vocabulary:

- frequency table
- relative frequency table
- distribution
- bar chart
- pie chart
- contingency table
- marginal distribution
- conditional distribution
- independent
- segmented bar chart



- Simpson's Paradox


Chapter 2:

1. According to the authors, what are the three rules of data analysis?
2. Explain the difference between a frequency table and a relative frequency table.
3. When is it appropriate to use a bar chart?
4. When is it appropriate to use a pie chart?
5. When is it appropriate to use a contingency table?
6. What does a marginal distribution show?
7. When is it appropriate to look at a conditional distribution?
8. What does it mean for two variables to be independent?

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9. How does a segmented bar chart compare to a pie chart?
10. Explain what is meant by Simpson's Paradox.

Displaying Quantitative Data



Key Vocabulary:

<ul style="list-style-type: none"> ▪ distribution ▪ histogram ▪ relative frequency histogram ▪ stem-and-leaf display ▪ dotplot ▪ shape ▪ center 	<ul style="list-style-type: none"> ▪ spread ▪ mode ▪ unimodal ▪ bimodal ▪ multimodal ▪ uniform ▪ symmetric ▪ tail 	<ul style="list-style-type: none"> ▪ skewed ▪ outliers ▪ gaps ▪ time plot ▪ re-expressing data
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Calculator Skills:

- display a histogram
- SortA (

Chapter 3:

1. What is meant by a *distribution*?
2. Explain the difference between a *histogram* and a *relative frequency histogram*.
3. In what ways are *histograms* similar to *stem-and-leaf displays*?
4. Name some advantages and disadvantages of *stem-and-leaf-displays*.
5. When is it more appropriate to use a *histogram* rather than a *stem-and leaf-display*?
6. Name some advantages and disadvantages of *dot plots*.
7. When describing a *distribution*, what three things should you always mention?
8. What should you look for when describing the *shape of a distribution*?

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9. In general, what is meant by the *center of a distribution*?

10. In general, what is meant by the *spread of a distribution*?

11. When is it appropriate to use a *time plot* to display quantitative data?

12. What is meant by *re-expressing or transforming data*? What is the purpose of *re-expressing or transforming data*?