

Probability & Statistics Summer Packet

The following problems are from the subjects covered in Algebra I, Algebra II, and Geometry. In this math course you will be expected to be somewhat familiar with the concepts related to the proceeding problems. **This packet** follows some introductory videos related to the course, curriculum, and background concepts, located in a **canvas summer course**, you are expected to join (<https://pcti.instructure.com/courses/14157>) You are expected to watch/work through these and respond to the associated prompts.

Use all/any internet resources and/or study groups.

You will submit this upon the commencement of school in September.

You will be asked to submit work as well. Name every page and state the problem# for every problem.

If we cannot follow, we will ask you to rewrite/update your submission.

Again, show work **where possible** for credit.



Probability & Statistics Summer Packet

PCTI Mathematics Department Summer Packet Grading

- On the first day of school, the teacher will check for completion/effort of the packet.
- This will be weighted at 50%.
- Teacher will then review the packet with the students.
- Upon completion of the review, the students will be given an assessment based on the summer packet.
- The assessment will be weighted at 50%.
- The two weighted scores combined will count as one project grade.
- Therefore, the grade for the summer packet will be placed under the “project” category.

Solve the equation

1. $\frac{k}{7} - 9 = 33$

2. $17 = -5x - 6x + 14$

3. $\frac{1}{2} = 4(5x - 3)$

4. $2(x + 3) = \frac{3}{4}(8x - 12)$

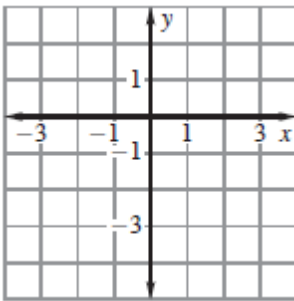
Write the equation so that y is a function of x .

5. $8x - 4y = 20$

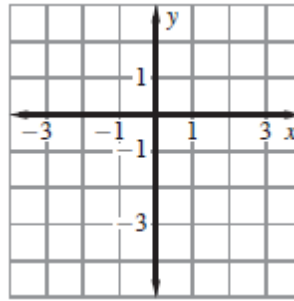
6. $4 + 5x = 20 - 10y$

Graph the equation.

7. $y = 3x - 4$

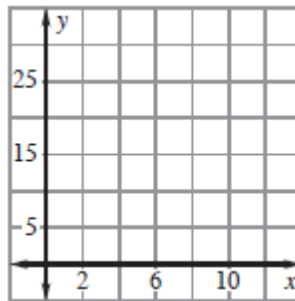


8. $2x - 3y = 1$



9. Make a scatter plot of the data.
Draw a line of fit. Then write an equation of the line.

x	0	2	4	6	8
y	8	12	16	20	24



In Exercise 10, use the following information. The test scores for an algebra class are: 75, 85, 97, 72, 86, 93, 91, 81, 85, 82, 88.

10. Find the mean, median, mode(s), and range of the data.

11. There are 13 teams of cheerleaders at a competition. The order of performance is determined at random. What is the probability that

your team performs first? What is the probability that you're friends team THEN performs second?

12. Which of the data sets below represents an inverse variation?

A

x	-3	-1	0	2
y	5	7	8	10

B

x	1	2	3	4
y	0.5	1	1.5	2

C

x	-2	1	3	4
y	-3	1.5	4.5	6

D

x	-3	1.2	1.5	2.4
y	-2	5	4	2.5

13. Shandra has 17 cousins. Which of the following expressions models how many different ways she can pick 6 of them to go to the beach with her?

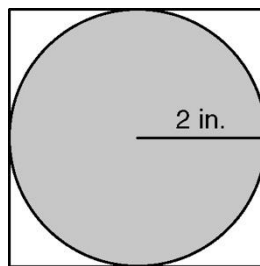
F $6!$

H $\frac{17!}{11!}$

G $\frac{17!}{6!}$

J $\frac{17!}{6!11!}$

14. What is the probability that a dart thrown at the board below will hit within the shaded circle?



A $\frac{2}{\pi}$

C $\frac{4}{\pi}$

B $\frac{\pi}{4}$

D $\frac{\pi}{2}$

Here you will be asked to watch the linked videos. While watching you are to take notes. You are also to include your thoughts and reflections on the video. This is open ended. It can be opinions. It can be things you are curious about. It can be questions you have. Etc. Should be a paragraph.

Introduction

- 1) <https://www.youtube.com/watch?v=sxQaBpKfDRk>

Notes / Reflections :

The power of statistics in our search for Truth

- 2) https://www.ted.com/talks/hans_rosling_the_best_stats_you_ve_ever_seen?language=en#t-228489

Notes / Reflections :

I want you to play around on this website, Gapminder. It's all statistics. The best statistics. Rest assured you can trust the data. Explore. Look into something you're interested in. You can look at the map. You can travel through time. You can pick your x and y variables. Tell me about it. Explain what it is you're looking at, what you're looking for. Spend at least 20 min looking into some things you find curious. If you can find statistics that upend previous suspicions or understandings, that's exactly what we're looking for.

- 3) [https://www.gapminder.org/tools/#\\$chart-type=bubbles&url=v1](https://www.gapminder.org/tools/#$chart-type=bubbles&url=v1)

Notes / Reflections :