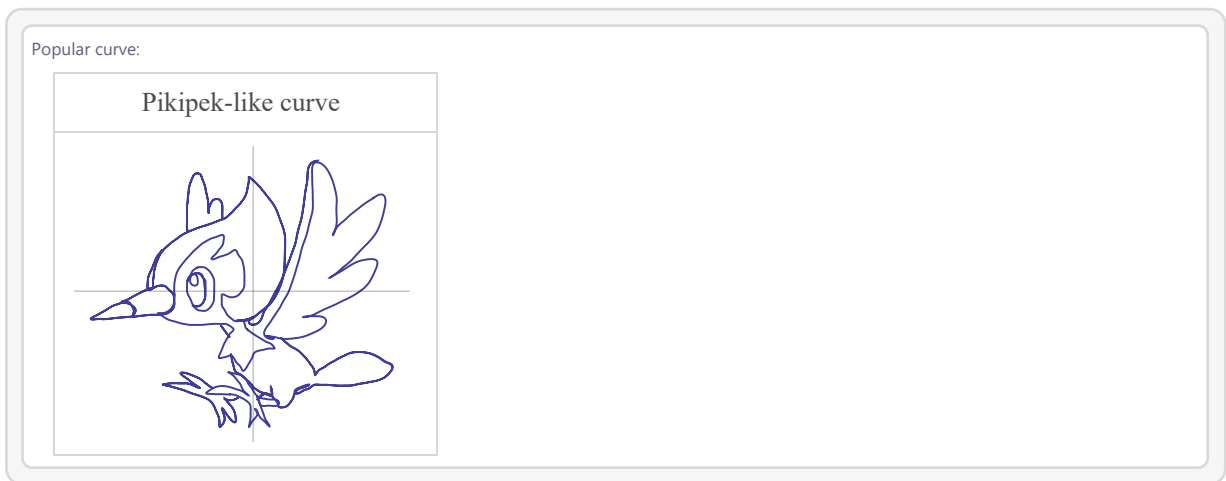


## Pokémath: Group Work 6

Name \_\_\_\_\_,

The Pokémon® lab has been working tirelessly to make sure the Pokémon® around the city are safe inside Pokeballs. But they're starting to run out before all the Pikipek have been rescued! They've asked us to determine the probability of a Pokeball catching a Pikipek. Let's practice using data to estimate probabilities!



### Getting Started

Open the file GW6 Excel.xlsx which contains data collected by the Pokémon® lab.

In the excel document is a bar graph showing the number of Pokémon® that were caught after each number of throws. (Check the axis labels)

### The Histogram

- 1) What do you notice about the shape? The height of the bars as you look further to the right?
- 2) Estimate some probabilities using the bar graph. If you are stuck, try to write the event in set notation and then find the probability using your probability rules!
  - a) Estimate the probability of catching Pikipek on the first throw. Call this event F.
  - b) Estimate the probability of catching Pikipek on the second throw. Call this event S.

- c) Estimate the probability of catching Pikipek on the third throw. Call this event T.
- d) Estimate the probability of catching Pikipek on the first or second throw. **Also write the event in set theory notation.**
- e) Estimate the probability of catching Pikipek on the first or second or third throw. **Also write the event in set theory notation.**
- f) Estimate the probability of **not** catching Pikipek on the first or second or third throw. **Also write the event in set theory notation.**
- g) Estimate the probability of catching a Pikipek on the first throw *and then* catching a different Pikipek on the second throw. (Are these events independent?)
- h) Estimate the probability of not catching a Pikipek on the first throw *and then* catching a different Pikipek on the third throw. (Are these events independent?)

## Catch probability

- 3) Now, consider *each throw* as a trial.
- a) What is the total number of balls thrown?
- b) How many were successful?
- c) To answer the Pokémon® lab's question: what is the probability of an individual ball catching a Pikipek?