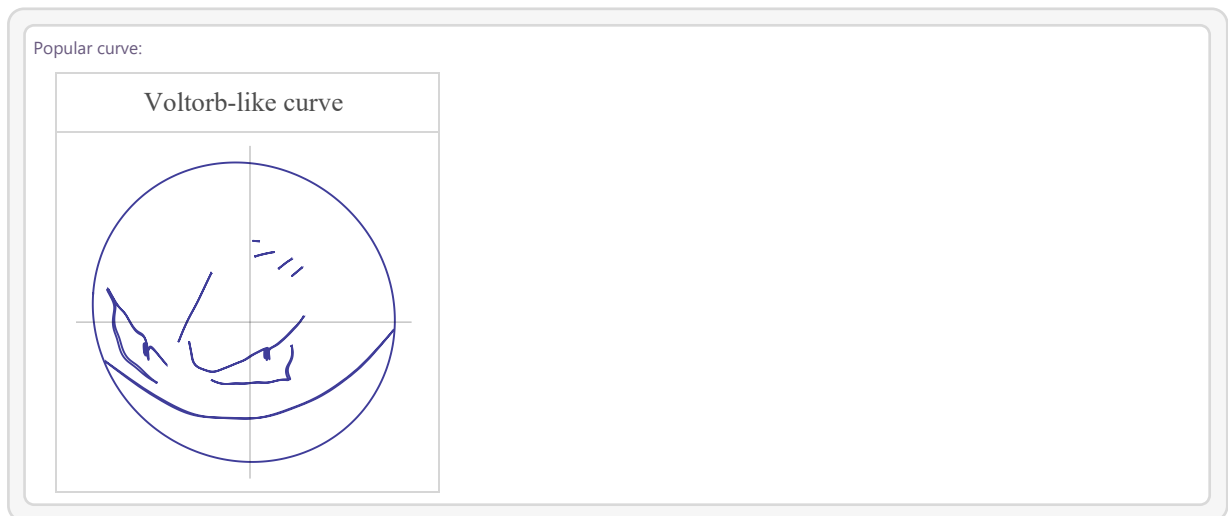


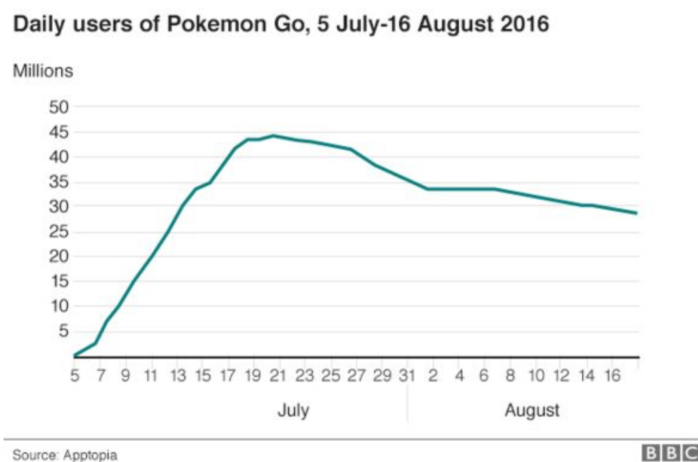
Pokémath : Homework 3



Remember: A function consists of a set of inputs called the **domain**, a set of outputs called the **range** and a rule by which **each input has exactly one output**. However, different inputs can have the same output!

Pokémon® Problems

1) Consider the Pokémon® GO usage data from the summer of 2016.



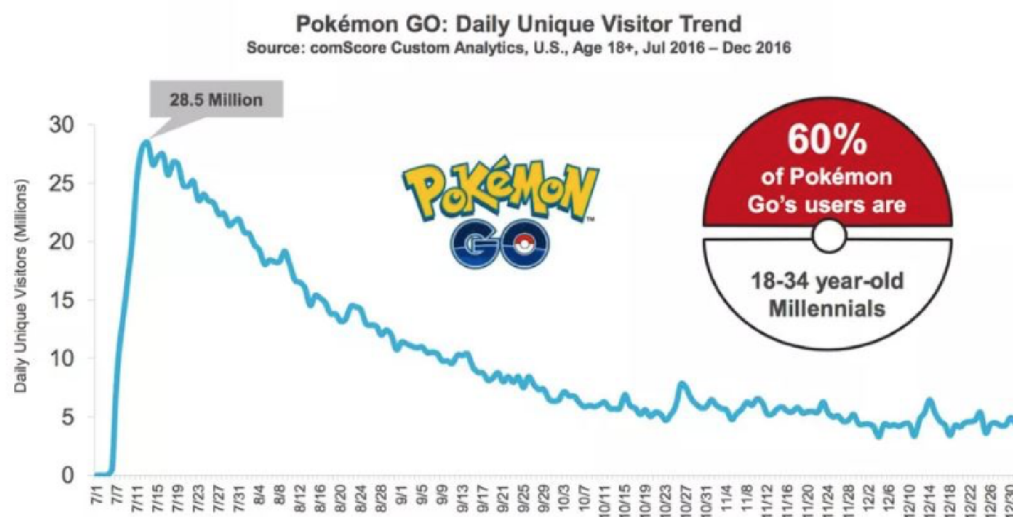
a) This graph represents a function, with the input on the horizontal axis and the output on the vertical axis. What are the domain and range?

b) What day did the most people play?

c) Approximately how many people played on August 12, 2016? On August 16, 2016?

d) Approximately how many people would you predict played on August 20, 2016? Explain your prediction.

e) Here is another “usage” figure from another website. It seems to tell a different story. In a few sentences, discuss the differences between these two figures and the functions they represent (remember a function is a domain, a range, and a rule!). How do those differences change your perception of the data?



2) The Experience Points (XP) earned for hatching eggs is given in the chart below. There is no typo, the 7km egg gives 500 XP.

Egg type	XP
2 km	200
5 km	500
7 km	500
10 km	1000

a) Is this a function? If so, what are the domain and range?

b) For each egg type, determine how much XP you earn divided by km travelled. Is this also a function?

- c) If you have an active lucky egg, this doubles your XP earned. For each egg type, determine how much XP you earn divided by km travelled when you hatch with a lucky egg.
- d) If you use a super incubator, you only need to travel $\frac{2}{3}$ of the distance as a normal incubator (so 10 km eggs only take 6.7 km and so on). For each egg type, determine how much XP you earn divided by km travelled when using a super incubator.
- e) Graph the XP per km for regular hatching, for hatching with an active lucky egg, and hatching with a super incubator at the same time. That is, graph three lines on the same plot.