Instructions:

This second homework will be a little different since we are mostly covering material from Appendix A.1 which doesn't have any end of chapter problems. As such, I will provide good "Guided Practice" problems from the book for your practice problems, which have their solutions at the bottom of the page in the book. The graded problems are of my own devising.

For the graded problems, make sure you *fully explain your reasoning*. Start each problem on a new page and upload everything to `www.gradescope.com` when you are done. If you need help scanning and submitting, check out the help pdf posted on the course webpage.

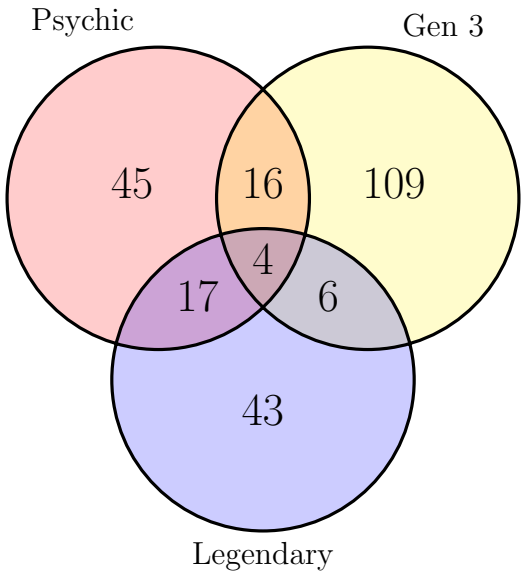
Practice Problems

A.9	Is `email` disjoint?
A.13	Venn probabilities
A.20	Probability distributions
A.26	Complementary probabilities
A.31	See A.30 for the % of people who are lefties

Graded Problems

See flip side

The below Venn diagram was compiled from data of all Gen 1–7 pokemon, with a total of 801 pokemon. Use it to help you answer both questions.



1. We'll start out with calculating basic probabilities. You draw one pokemon at random out of the entire 801.
   (a) What is the probability of it being a psychic type pokemon?
   (b) What is the probability of it being a legendary psychic type?
   (c) What is the probability of it being a psychic Gen 3 pokemon that is not legendary?

2. Suppose you are playing along with a small sibling that loves 75% of the pokemon you catch, regardless of what type, rarity or generation they might be. Say you catch 3 pokemon at random.
   (a) What is the probability that the first pokemon is a psychic type and one that your sibling loves?
   (b) What is the probability that the first 2 pokemon you catch are both psychic type and ones that your sibling loves?
   (c) What is the probability that the first 2 pokemon you catch are psychic ones that your sibling loves, and that the third is a legendary type that they dislike?