Lesson: Complementary Probability

September 4, 20XX

Objective

I can calculate the probability of a complementary event

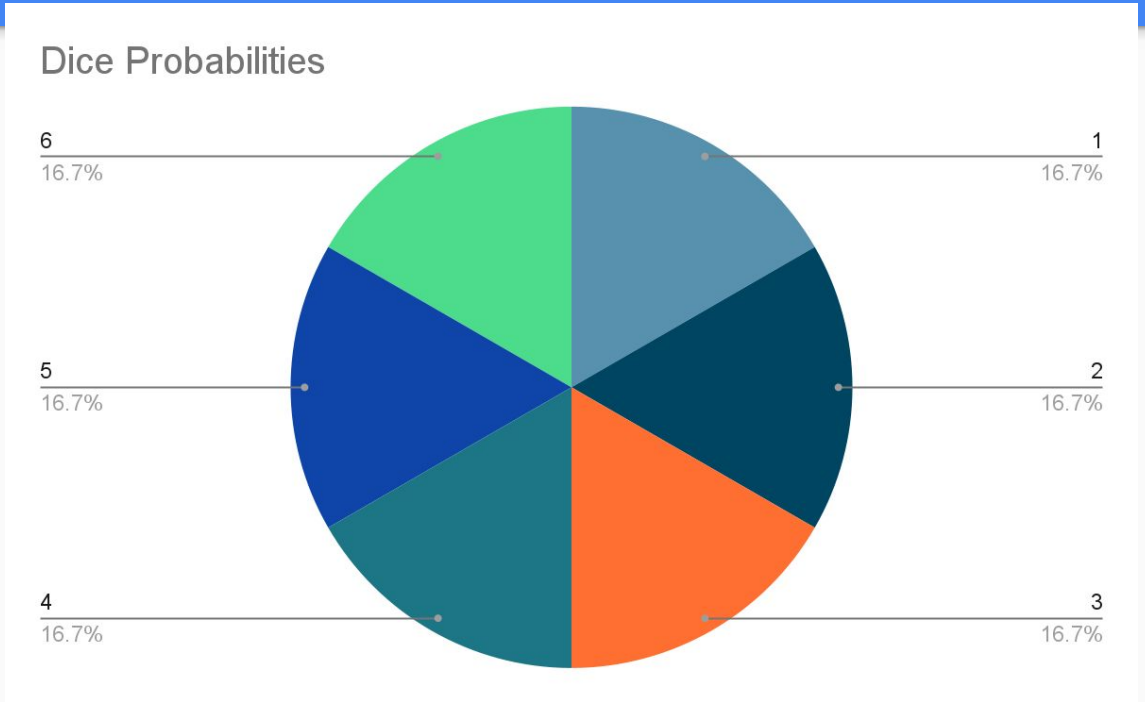
- “I can know how likely a thing is not to happen if I know how likely it is to happen"

Vocab review

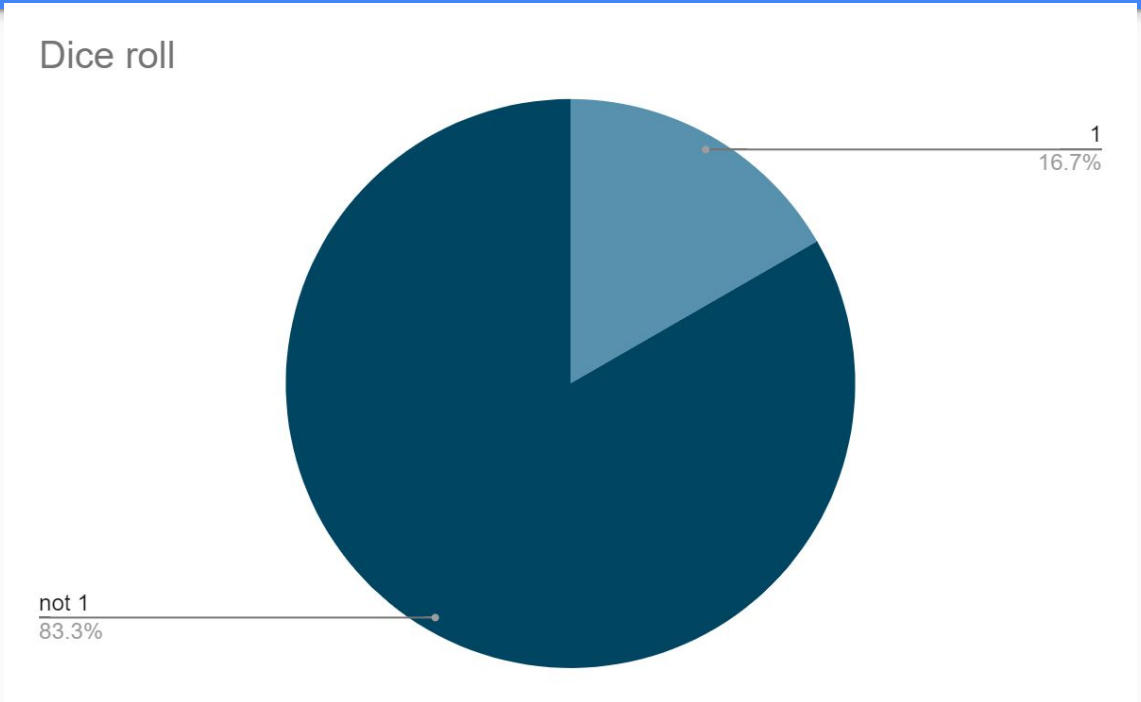
- Event: literally ally anything that happens by chance
    - Eg. heads or tails, result of dice roll, rain, the Eels winning
- Complementary: contrasting. Things that go together but are different
    - e.g. rainy and sunny, heads and tails, win or lose

If getting heads on a coin flip is 50% likely, what is the likelihood we'll get tails?

Pie chart of dice roll



New pie chart of dice roll



How do we calculate this probability on paper?

- The pie is 1 whole.
- P(1) = ⅙ of the pie
- P(not rolling 1) = you tell me, idk
- Btw we give name P(1’) to P(not rolling 1)
- It's just a bit shorter

Formula

So we had ⅚ because

⅙ + ⅚ = 6/6 = 1

How do we say this for a general case? (That is, not just dice)

Let's say A is some event

P(A) + P(A') = 1

So, P(A') = 1 - P(A)

Remember: total probability is always 1!

Now for some examples