Lecture 37, class activity. Dependent random variables.

Let us consider a coin that every time it flips a head, it gets 50% more likely to flip a head.

So for example, the first time we flip the coin it is heads with probability p. If we flip the coin once, and we get a head, then on the next flip, it will be a head with probability $1.5p$. If we have flipped two heads at some point, the probability to flip a head is now $2p$, etc.

1. Flip the coin once: what is the distribution for the number of heads?

2. Flip the coin twice: what is the distribution for the number of heads?

3. **Tricky!** Flip the coin thrice: what is the distribution for the number of heads?