Lesson 5:
Binomial Distribution

SEARCH

RESOURCES

CONCEPTS

6. Quiz: 5 Flips 3 Heads

7. Quiz: 10 Flips 5 Heads

8. Quiz: Formula

9. Quiz: Arrangements

10. Quiz: Binomial 1

11. Quiz: Binomial 2

12. Quiz: Binomial 3

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16. Binomial Conclusion

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Mentor Help
Ask a mentor on our Q&A platform

Text: Recap + Next Steps

The Binomial Distribution

The **Binomial Distribution** helps us determine the probability of a string of inde events'.

The probability mass function associated with the binomial distribution is of th

$$P(X = x) = \frac{n!}{x!(n-x)!}p^x(1-p)^{n-x}$$

where **n** is the number of events, **x** is the number of "successes", and **p** is the p

We can now use this distribution to determine the probability of things like:

- The probability of 3 heads occurring in 10 flips.
- The probability of observing 8 or more heads occurring in 10 flips.
- The probability of not observing any heads in 20 flips.

Looking Ahead

The truth is that in practice, you will commonly be working with data, which mi distribution. So it is less important to calculate these probabilities (though this cases), and it is more important that you understand what the Binomial Distrib shows up in a lot of modeling techniques in machine learning, and it can sneak tracking any outcome with two possible events. You will get some practice with **Probability Practice** lesson.

One of the most popular places you see the Binomial distribution is in logistic r will learn about in the last lesson of this statistics course.

In the next section, you will begin to work with events that aren't independent. seen so far haven't influenced one another, but it turns out the real world is us than this. The next section will introduce the idea of dependence, and you will l Bayes rule in the following section.