Empirical Probability Distribution and Expected Value

Today's Standard

HSS.MD.A4 - (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?

Real-World Applications for this Standard

Analyzing household appliance distributions; Predicting product demand in a market; Estimating average attendance at events; Assessing risk in financial investments

Today I Learned

Today, we learned how to use data to make predictions. We looked at how many TVs people have in their homes and figured out how many TVs we might find if we checked 100 homes.

Common Stumbling Blocks

Sometimes, kids think the expected value is the most likely number, but it's really an average of all the numbers. They might also mix up data we collect from real life with data we get from math problems.

Quiz Me

- How do we find out how many TVs are in homes?
- What is an expected value?
- What is empirical data?
- How is empirical data different from theoretical data?
- Can you give an example of using data to make a prediction?

Help Me

We can use data from real life to make predictions. For example, if we know how many TVs are in some homes, we can guess how many TVs might be in other homes. This helps us understand and plan for things in the real world.