

A Little Confusion?

Fred says that if a family has two children, and the older child is a boy, there is a 50% chance the family will have two boys. However, Freda says if there are two children in a family, and one is a boy, the chance of having two boys is $\frac{1}{3}$. This implies that if the sex of the first child is known, then the probability of having two boys is different.

Think about the two situations. Who is right: Fred, Freda, or both of them? Write a convincing argument.

Answer: