



7.4: Simulations using Excel and Relative Frequency Distributions

Suppose two fair di are rolled. What is the likelihood that the sum of the two di is a seven?

Simulation Approach

Run an simulation with 10,000 trials (rolls) in Microsoft Excel. Calculate the sum of each trial. Then determine the relative frequency of the sum being a 7.

New Excel Functions

1. RANDBETWEEN()
2. COUNTIF()



How close is our simulation's relative frequency to the probability of the sum being a seven?

		Roll 2					
		1	2	3	4	5	6
Roll 1	1						
	2						
	3						
	4						
	5						
	6						



Probability

Probability Distribution		
Result	Frequency	Probability



Suppose a couple decides to have 3 children. Assuming there are no multiple births, what is the likelihood that the couple will have 0 boys, 1 boy, 2 boys, or 3 boys?

Simulation Approach

Run a simulation with 10,000 trials in Microsoft Excel. Create a relative frequency distribution that answers the question above.



From your Simulation

Relative Frequency Distribution		
Result	Frequency	Relative Frequency
0 boys		
1 boy		
2 boys		
3 boys		



How close does our simulation match the probability?

Sample Space



Probability		
Result	Frequency	Probability
0 boys		
1 boy		
2 boys		
3 boys		



Assessment

Layoffs Project/Presentation