Class Activity

Let's play a game involving probability! This game is played with two six-sided dice. Each player takes turns to roll the dice. If the highest value on either die is 1, 2, 3, or 4, Player A wins the round. If the highest value on either die is 5 or 6, Player B wins the round.

1. With this information, if you were to play the game would you rather be: Player A or Player B?

   _____

   Now play the game 18 times and record the outcome of each round in the table below.

Trial	Die 1	Die 2	Winner (A or B?)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

2. Calculate the empirical probability of Player A winning the game and Player B winning the game:

   - P(A) =
   - P(B) =

3. Did playing the game 18 times changed your initial perception on which player has the better odds in the game. Would you still rather be the player you picked earlier?

4. Let's calculate the theoretical probability now. Write down the all the possible outcomes of this random experiment of rolling a pair of die. (Hint: Make a table)

5. Now calculate the theoretical probability of player A winning the game and player B winning the game.

Lets change the rules of the game. If the highest value on either die is 1, 2, 3, or 5, Player A wins the game. If the highest value on either die is 4 or 6, Player B wins the game. Now calculate the theoretical probability of each player winning the game.