

Trial and Error

Take a random number between 0 and 1. Then, take a second random number between 0 and 1 and add it to the first. If this sum is greater than 1, stop. If the number is not greater than 1, randomly select another number between 0 and 1 and add it to the running total and continue this process until the sum is greater than 1. What is the average number of times you will need to select a number to make this sum greater than 1?

Note: The answer is not limited to positive integers; e.g., the average number you would expect from rolling a standard die would be $3\frac{1}{2}$.

Also, you have an equal chance of picking any number between 0 and 1.