MTH208a: Assignment 1

A tennis match runs on the concept of: "best-of-five". The two tennis players play *at most* 5 sets. If a clear winner is determined by set number x (<5), then the rest of the $5-x$ sets are not played. (For example, if player A plays against player B, and the win sequence is $ABAA$, the winner is clearly A, so the last set will not be played.)

Let p be the probability of player A winning a set.

1. Write an `R` function that returns the number of sets that are played (x) in one simulated tennis match. Call this function `tennis`. It should take as input, the probability of success p and should output the number of games played, x. The function should look like:

```
tennis <- function(p)
{
  ...
  return(x)
}
```

2. Repeat the simulation 1000 times for $p = 0.70$ and save the output in a vector called `matches`. Save the average number of matches, `mean(matches)` in object `ans`. So your code should look like:

```
matches <- …
for(i in 1:1000)
{
  matches[i] <- ….
}
ans <- mean(matches)
```

3. Copy all relevant code and paste it in the `assignment1.R` file in your Assignment GitHub repository. **Your code you copy and paste should run without any errors. The last line of the code should be `ans <- mean(matches)`.**