Assignment 11 IPFCE

Prove the recursive factorial function by induction:

```
/* Factorial function definition */
int fact(int n)
{
  /* pre-condition */
  assert (n >= 1);

  /* post-condition */
  if(n > 1)
    return n * fact(n - 1);
  else
    return 1;
}
```

Base case:

fact(1) = 1, which is consistent with (1!)

Inductive step:

Assume fact(n-1) correctly computes the fact(n-1)th factorial number for integer n > 1 denoted as F_{n-1}.

Then: fact(n) = fib(n-1)

Which is the definition of the n'th factorial F_n

So if we take fact(5), we get fib(5-1) which is fact(4-1) all the way down.