7. Recursion (15p)

The real constant e, which has many applications in Mathematics and Engineering, can be calculated with the following formula:

$$e = \sum_{i=0}^{n} \frac{1}{n!}$$

where '!' stands for factorial (N!= 1*2*3* . . . *N). **Write a complete C program** that approximates the value of **e** using the first 10 elements of the series given above. The first 10 elements can be represented as follows:

$$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \frac{1}{5!} + \frac{1}{6!} + \frac{1}{7!} + \frac{1}{8!} + \frac{1}{9!}$$

Note: your program must contain a recursive function.

```
double recursive(int n){
  if(n==0||n==1)
    return 1
  else
    return n * recursive(n-1);
}

int main(){
  for(int i=0; i<10; i++){
    double e = 1/recursive(i);
  }
  printf("%f", e);
}
```