Recursion

```
# Addition

def add(n):
    # Base condition
    if n == 1:
        return 1

    # Recurrence relation
    return n + add(n-1)

add(5)
```

```
15
```

```
add(10)
```

```
55
```

```
# def add(n):

#     # Recurrence relation
#     return n + add(n-1)
```

Factorial

```
def fact(n):
    # base condition
    if n == 0 or n == 1:
        return 1

    # recurrence relation
    return n * fact(n-1)

# fact(5) = 5 * fact(4)

fact(5)
```

```
120
```

```
fact(3)
```

```
6
```

```
# HW: Find factorial of numbers from 1 to 10
```

Fibonacci

```
def fibo(n):
    # Base condition
    if n == 0 or n == 1:
        return n

    # Recurrence relation
    return fibo(n - 1) + fibo(n - 2)
```

```
fibo(1)
```

```
1
```

```
fibo(0)
```

```
0
```

```
fibo(2)
```

```
1
```

```
fibo(3)
```

```
2
```

```
# Write a code to print fibo series

for i in range(10):
    print(i)
```

```
0
1
2
3
4
5
6
7
8
9
```

```
for i in range(10):
    print(i, fibo(i))
```

```
0 0
1 1
2 1
3 2
4 3
```

```
5 5
6 8
7 13
8 21
9 34
```

Power

```
# Fill in the code

def power(a, n):
    # Base condition


    return None
```