

## Iteration

## Announcements

## Return

## Return Statements

A return statement completes the evaluation of a call expression and provides its value  $f(x)$  for user-defined function  $f$ : switch to a new environment; execute  $f$ 's body  
**return** statement within  $f$ : switch back to the previous environment;  $f(x)$  now has a value  
Only one return statement is ever executed while executing the body of a function

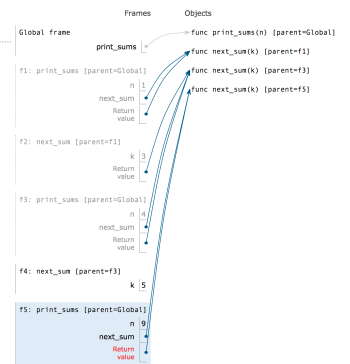
```
def end(n, d):  
    """Print the final digits of N in reverse order until D is found.  
    >>> end(34567, 5)  
    7  
    6  
    5  
    """  
    while n > 0:  
        last, n = n % 10, n // 10  
        print(last)  
        if d == last:  
            return None
```

(Demo)

## Self-Reference

## Returning a Function Using Its Own Name

```
1 def print_sums(n):  
2     print(n)  
3     def next_sum(k):  
4         return print_sums(n+k)  
5     return next_sum  
6  
7 print_sums(1)(3)(5)
```



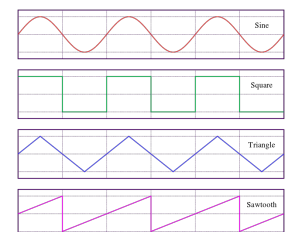
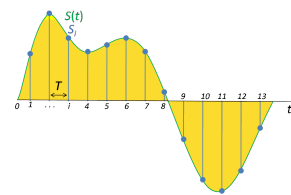
(Demo)

## Function Example: Sounds

## WAV Files

The Waveform Audio File Format encodes a sampled sound wave

A triangle wave is the simple wave form with the most pleasing sound



(Demo)