# Determine the Number of Steps Required to get Down to 1

**For any number, i, the next number in the sequence is *i/2* if i is even or *3i+1* if i is odd**

In [1]:
```
for i in range(5, 21):                  # Iterate over the numbers from 5 to 20
    num_steps = 0
    curr_val = i                        # Current value in the sequence begins at i

    while(curr_val != 1):               # Continue looping the sequence until it reaches 1
        if(curr_val % 2 == 0):          # Check if the current value is even and
            curr_val /= 2               # divide by 2 if True
        else:
            curr_val = 3*curr_val+1     # Otherwise multiply by 3 and add 1
        num_steps += 1                  # Increment the number of steps taken

    # Print each number followed by the number of steps taken for it to reach 1
    print("{:2d}: {:2d} steps".format(i, num_steps))
```

```
 5:  5 steps
 6:  8 steps
 7: 16 steps
 8:  3 steps
 9: 19 steps
10:  6 steps
11: 14 steps
12:  9 steps
13:  9 steps
14: 17 steps
15: 17 steps
16:  4 steps
17: 12 steps
18: 20 steps
19: 20 steps
20:  7 steps
```