def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

# test code:

result = factorial(3)

Here, n = **3**

**12**

**11**

**10**

Here, n = **0**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

Here, n = **1**

**9**

**8**

**7**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

Here, n = **2**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

**6**

**5**

**4**

**3**

**2**

**1**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

Return to this line. So, now recurse = 2

**19**

**20**

**21**

Here, n = **3**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result # = 3 \* 2

Here, n = **1**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result # = 1\*1

**16**

**17**

**18**

Return to this line. So, now recurse = 1

Here, n = **2**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result # = 2\*1

Here, n = **0**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

Return to this line. So, now recurse = 1

**15**

**14**

**12**

**11**

**10**

**13**

def **factorial**(n):

 if n == 0:

 return 1

 else:

 recurse= **factorial**(n-1)

 result = n \* recurse

 return result

# test code:

result = factorial(3) # eventually, it goes back to the main script,

 # where the function is called, and

 # at last, result = 6