

What happens next? (A)

```
def factorial(n):
    """Returns: factorial of n.
    Pre: n ≥ 0 an int"""
    1 if n == 0:
    2 | return 1
    3 return n*factorial(n-1)
Call: factorial(3)
```

A: CORRECT

factorial / 3

n 3

factorial 1

n 2

B:

factorial / 1

n 2

C: ERASE FRAME

factorial 1

n 3

D:

factorial / 1

n 2

factorial / 3

n 3

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How to Combine? (A)

```
def reverse(s):
    """Returns: reverse of s
    Precondition: s a string"""
    # 1. Handle base case
    # 2. Break into two parts
    left = reverse(s[0])
    right = reverse(s[1:])
    # 3. Combine the result
```

H e l l o !

↓ ↓

left H e l l o !

↓

right ! o l l e

CORRECT

return A: left + right B: right + left C: left D: right

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What is the Base Case? (A)

```
def reverse(s):
    """Returns: reverse of s
    Precondition: s a string"""
    # 1. Handle base case
    # 2. Break into two parts
    left = reverse(s[0])
    right = reverse(s[1:])
    # 3. Combine the result
    return right+left
```

H e l l o !

A: if s == "":
return s

B: if len(s) <= 2:
return s

C: if len(s) <= 1:
return s

CORRECT

D: Either A or C would work

E: A, B, and C would all work

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Alternate Implementation (A)

```
def reverse(s):
    """Returns: reverse of s
    Precondition: s a string"""
    # 1. Handle base case
    if len(s) <= 1:
        return s
    # 2. Break into two parts
    half = len(s)//2
    left = reverse(s[:half])
    right = reverse(s[half:])
    # 3. Combine the result
    return right+left
```

Does this work?

CORRECT A: YES

B: NO

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