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Exercise 6

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Exercise 6

4/4 points (graded)

ESTIMATED TIME TO COMPLETE: 6 minutes

Consider the following Python procedures. For each one, specify its order of growth.

1.

```
# Assume n has been previously bound to some value
i = 0
while i < 5:
    n *= 2
    i += 1

print(n)
```

O(1)

✓
2.

```
def iterPower(a, b):
    result = 1
    while b > 0:
        result *= a
        b -= 1
    return result
```

O(b)

✓
3.

```
def recurPower(a, b):
    print(a, b)
    if b == 0:
        return 1
    else:
        return a * recurPower(a, b-1)
```

O(b)

✓
4.

```
def recurPowerNew(a, b):
    print(a, b)
    if b == 0:
        return 1
    elif b%2 == 0:
        return recurPowerNew(a*a, b/2)
    else:
        return a * recurPowerNew(a, b-1)
```

O(log(b))

✓

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Exercise 6

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