Orders of Growth: exam-level questions

> If you need help reviewing Orders of Growth, take a look at these resources:
>
> - Albert's and Robert's slides (https://docs.google.com/presentation/d/1cmJY7GNCTm4YqeEaS3Qp4U0PAGRPdoe1Akb05JOkgP4/edit)

This link (http://www-inst.eecs.berkeley.edu/~cs61a/su12/lab/lab04/lab04.php) (from the Summer 2012 version of 61A) has some practice problems for orders of growth. Take a look!

Each question has a "Toggle Solution" button -- click it to reveal that question's solution.

Conceptual Questions

Question 1

Find the time complexity of `main` in big-Theta (θ) notation.

```
def helper(x):
    for i in range(x):
        print(i)
    return x

def main(n):
    if n == 2:
        return 0
    else:
        return helper(n - 1) + helper(n - 2)
```

Toggle Solution

Question 2

Find the time complexity of `bar` in big-Theta (θ) notation.

```
def foo(x):
    for i in range(x):
        for j in range(x):
            print(x)

def bar(n):
    while n > 0:
        foo(100000)
        n -= 1
```

Toggle Solution

Question 3

Find the time complexity of `funny` in big-Theta (θ) notation.

```
def joke(n):
    for i in range(n**2):
        print(i)

def funny(n):
    for i in range(n**2):
        print(joke(100))
    return 'haha'
```

Toggle Solution