Problem 2-1

You have the following class hierarchy:

```
class A(object):
    def foo(self):
        print 'hi'
class B(A):
    def foo(self):
        print 'bye'
```

Which of the following is correct?

- (selected) When `a = A()` we say that `a` is an instance of `A` ✔
- When `b = B()` we say that `b` is a subclass of `A`
- Both of the above
- Neither of the above

You have used 1 of 1 submissions

Problem 2-2

Consider the function `f` below. What is its Big O complexity?

```
def f(n):
    def g(m):
        m = 0
        for i in range(m):
            print m
    for i in range(n):
        g(n)
```

- ○ $O(1)$
- ○ $O(log(n))$
- ○ $O(n)$
- ◉ $O(n^2)$ ✖

You have used 1 of 1 submissions

Problem 2-3

A dictionary is an immutable object because its keys are immutable.

- ○ True
- ○ False because its keys can be mutable
- ◉ False because a dictionary is mutable ✔

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Problem 2-4

Consider the following two functions and select the correct choice below:

```
def foo_one(n):
    """ Assume n is an int >= 0 """
    answer = 1.0
    while n > 1:
        answer *= n
        n -= 1
    return answer

def foo_two(n):
    """ Assume n is an int >= 0 """
    if n <= 1:
        return 1.0
    else:
        return n*foo_two(n-1)
```

- The worst case Big Oh time complexity of `foo_one` is worse than the worst case Big Oh time complexity of `foo_two`.
- The worst case Big Oh time complexity of `foo_two` is worse than the worst case Big Oh time complexity of `foo_one`.
- (•) The worst case Big Oh time complexity of `foo_one` and `foo_two` are the same. ✔
- Impossible to compare the worst case Big Oh time complexities of the two functions.

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Problem 2-5

The complexity of $1^n + n^4 + 4n + 4$ is

- constant
- logarithmic

- linear
- polynomial ✔
- exponential

You have used 1 of 1 submissions