CS 61A Reverse Environment Diagram Practice
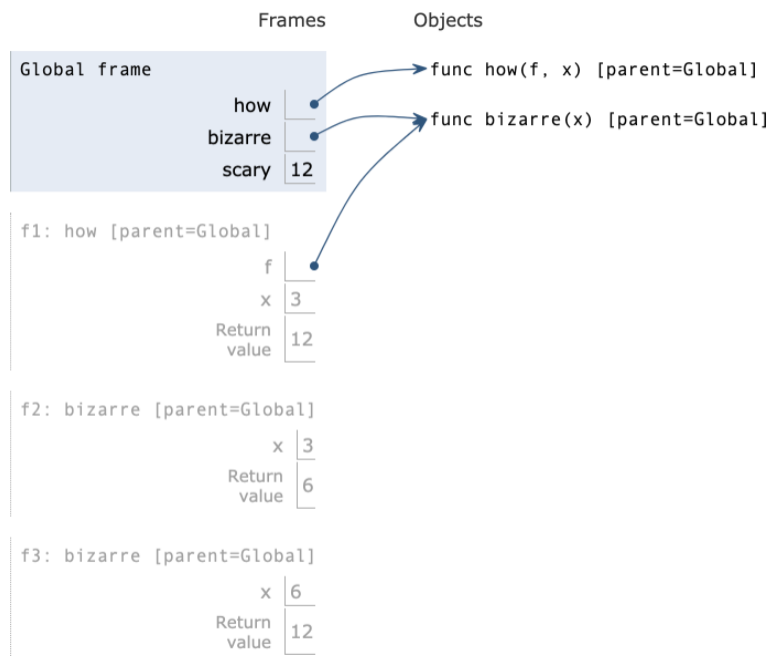## Spring 2021

Questions

0.1   Fill in the lines below so that the execution of the program would lead to the environment diagram below. You may not use any numbers in any blanks.

```
def how(f, x):
    return _____

def bizarre(___):
    return 2 * _____

scary = _____(_____, 3)
```
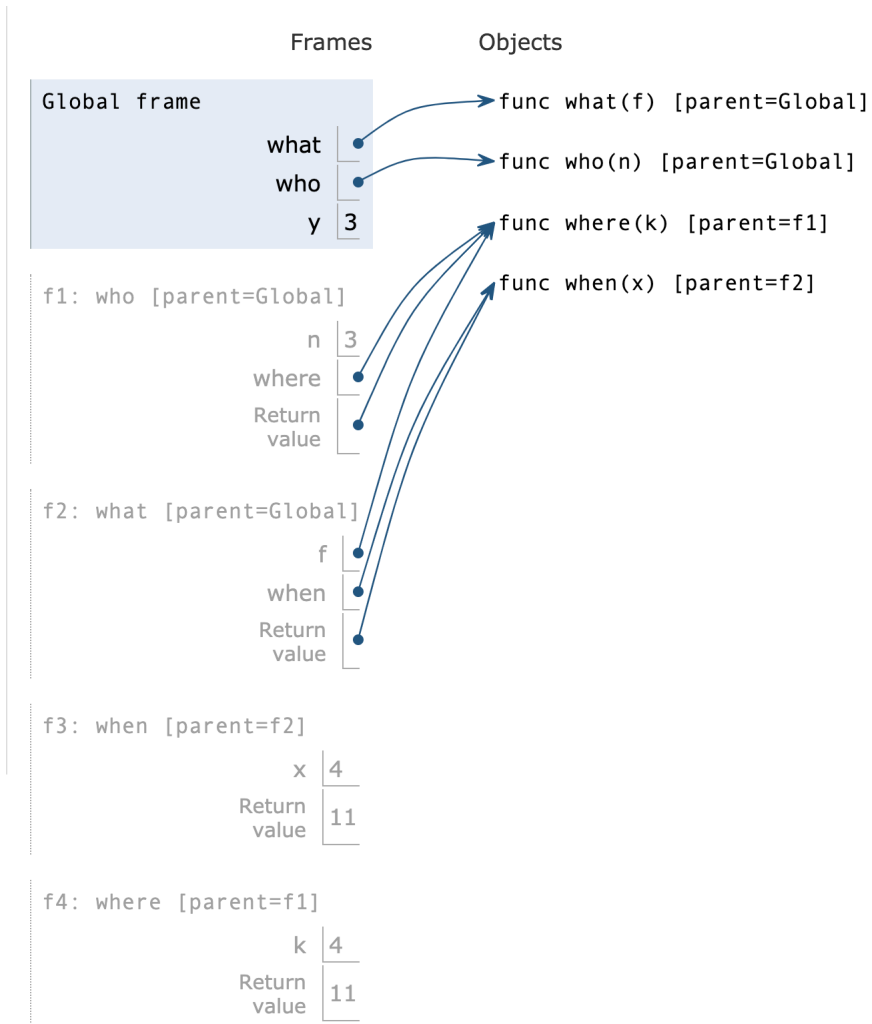
0.2 Fill in the lines below so that the execution of the program would lead to the environment diagram below. You may not use any numbers in any blanks.

```
def what(_____):
    def _____(x):
        return _____
    return _____

def who(n):
    def _____(k):
        return 2 * k + n
    return _____

y = 3
_____(____(____))(4)
```
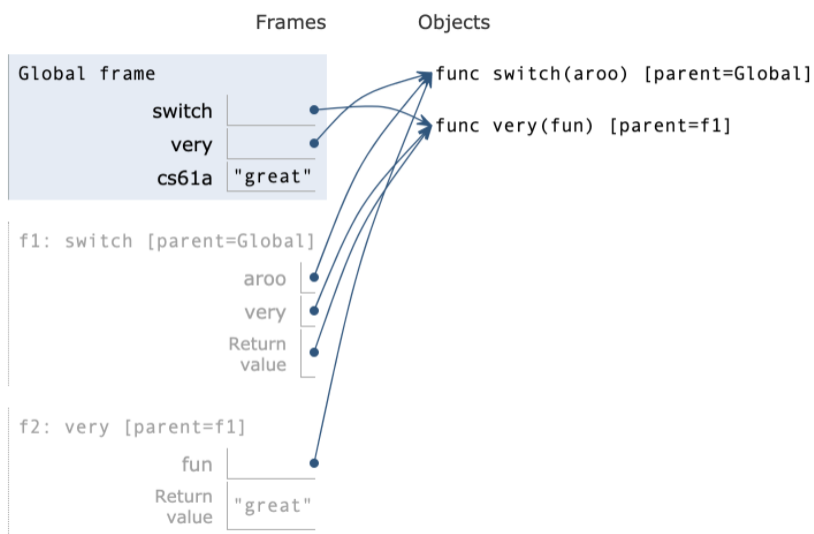
0.3 Fill in the lines below so that the execution of the program would lead to the
environment diagram below. You may not use any numbers in any blanks.

```
def switch(aroo):
    def _____(fun):
        if aroo _____ fun:
            return "great"
        return "terrible"
    return _____

very = switch(_____)
_____
cs61a = switch(_____)
```

Frames   Objects

Global frame   func switch(aroo) [parent=Global]
              switch
                very   func very(fun) [parent=f1]
               cs61a   "great"

f1: switch [parent=Global]
                 aroo
                 very
               Return
                value

f2: very [parent=f1]
                  fun
               Return   "great"
                value

0.4 Fill in the lines below so that the execution of the program would lead to the environment diagram below.You may only use y, (,), and h in the blanks.

```
y = "y"
h = _____
def y(____):
    h = "h"
    if y == h:
        return y + "i"
    y = lambda _____: _____
    return lambda _____: ____
y = y(____)(_____)
```

Frames   Objects

Global frame   func y(y) [parent=Global]

y   "hi"   func λ(y) <line 7> [parent=f1]
h   "y"

func λ(h) <line 8> [parent=f1]

f1: y [parent=Global]

y
h   "h"
Return
value

f2: λ <line 8> [parent=f1]

h
Return   "hi"
value

f3: λ <line 7> [parent=f1]

y
Return   "hi"
value

f4: y [parent=Global]

y   "h"
h   "h"
Return   "hi"
value