

# Quiz 1 Solution

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1. Identify each expression: is it a primitive expression or a call expression?

- (**primitive** / **call**)    3
- (**primitive** / **call**)    add(2, 3)
- (**primitive** / **call**)    print(5)
- (**primitive** / **call**)    3 + 4

2. When do we make a new frame in an environment diagram?

We make a new frame in an environment diagram when calling a user-defined function.

3. Imagine we run the following lines in `python`. Draw the environment diagram after executing the program.

```
def swap(x, y):  
    x, y = y, x  
    return print('Swapped!', x, y)
```

```
x, y = 60, 1  
a = swap(x, y)  
swap(a, y)
```

<http://goo.gl/Lp90MJ>

4. **What Would Python Display?** Consider what would happen if we ran the following instructions in the `python` interpreter. Below each expression, write the output from the interpreter or **Error** if an error occurs.

```
>>> 3 + 4
7
>>> '3' + 4
Error
>>> '3 + 4'
'3 + 4'
>>> 1 / 0
Error
>>> def boom():
...     return 1 / 0
...
>>> boom()
Error
>>> def square(x):
...     return x * x
...
>>> def happiness(num):
...     print(x)
...     return num
...
>>> square(happiness(5))
Error
>>> def sadness(num):
...     return num
...     print(num / 0)
...
>>> square(sadness(5))
25
```