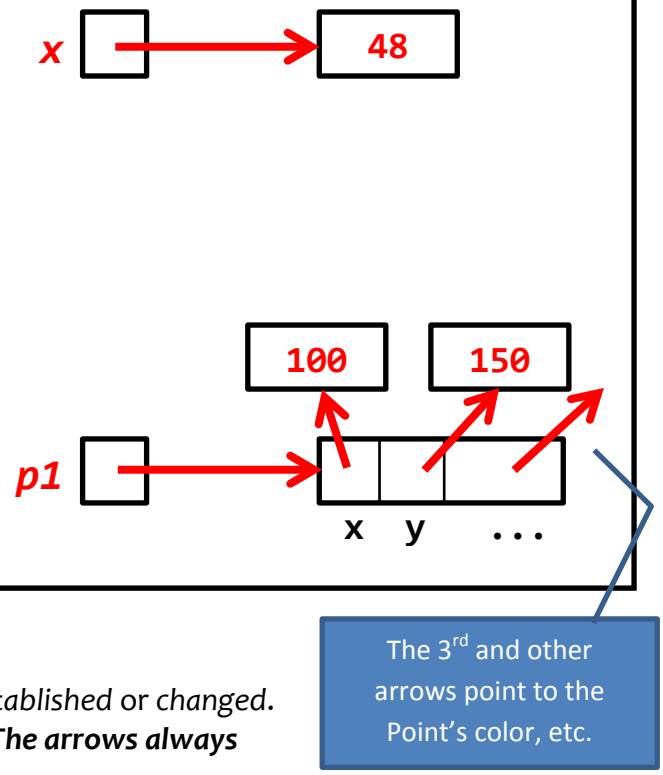
Name: _____

1. With your instructor, draw a Box and Pointer diagram that shows what happens when the following statements execute. (Use the boxes we supplied; just add labels and arrows for variables and data for objects.)

```
x = 48
p1 = zg.Point(100, 150)
```

Box and Pointer diagram:



The 3rd and other arrows point to the Point's color, etc.

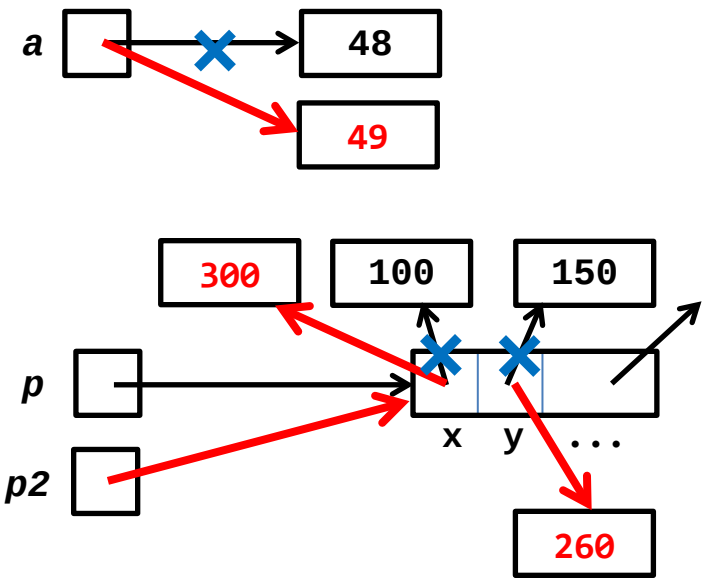
2. An ***assignment statement*** causes an arrow to be *established* or *changed*. That's true for fields as well as ordinary variables. ***The arrows always point to objects, never to other variables.***

With your instructor, draw a Box and Pointer diagram that shows what happens when the statements below execute. (We've already done the first two statements.)

```
a = 48
p = zg.Point(100, 150)

a = a + 1
p.x = 300
p2 = p
p2.y = p.x - 40
```

Box and Pointer diagram:



In doing this exercise, note that it is perfectly OK to have two variables refer to the ***same*** object.

3. A ***function call*** creates a new ***namespace*** in which the function will run. The ***parameters*** are variables in that namespace. When the function is called, the first thing that happens is that each parameter is assigned the ***value*** of the corresponding actual argument.

   For example, in the code snippet below when `foo(100, x)` executes, the parameter `a` is assigned the value `100`, just as if the statement `a = 100` were executed.

   With your instructor, draw a Box and Pointer diagram that shows what happens when *main* (below) executes.

```
def main():
    x = 48
    foo(100, x)
    foo(x, 30)

def foo(a, b):
    ...
```

Box and Pointer diagram: