Name:_____ CM: _____Sect:____

Review Question

Simple Object Questions

Draw the following boxes and pointer diagrams. Use the following classes:

```
class Ninja {
   private String name;
   private int level;

   public Ninja(String name) {
       this.name = name;
       this.level = 1;
   }

   public void setLevel(int level) {
       this.level = level;
   }
}
```

```
class Pirate {
    private Ninja enemy;

    public Pirate(Ninja n) {
        this.enemy = n;
    }

    public Pirate() {
       this.enemy = new Ninja("Foo");
    }
}
```

1.

```
Ninja n = new Ninja("Sarah");
double var = 3;
```

2.

```
Ninja n = new Ninja("a");
Ninja n2 = new Ninja("b");
Ninja n3 = new Ninja("c");
n2 = n3;
```

3.

```
int level = 7;
Ninja n = new Ninja("Bar");
Pirate p = new Pirate();
```

4.

```
Ninja n = new Ninja(“a”);
Ninja n2 = n;
n = new Ninja(“b”);
```

5.

```
Ninja n = new Ninja(“a”);
Pirate p1 = new Pirate(n);
Pirate p2 = new Pirate(n);
```

6.

```
Ninja[] ninjas1 = new Ninja[5];
Ninja[] ninjas2 = ninjas1;
ninjas1[0] = new Ninja(“Steve”);
```

7.

```
String s = new String(“Hello”);
Ninja n = new Ninja(s);
s = s.replace(“l”,”Q”);
```

8.

```
Pirate p = new Pirate(null);
```

9.

```
String name = “Buffalo”;
Ninja[] ninjas = new Ninja[3];
for(int i = 0; i < 3; i++) {
      ninjas[i] = new Ninja(name);
      ninjas[i].setLevel(i);
}
```

10.

```
Ninja buffalo = new Ninja(“Buffalo”);
Ninja[] ninjas = new Ninja[3];
for(int i = 0; i < 3; i++) {
      ninjas[i] = buffalo;
      ninjas[i].setLevel(i);
}
```

11. What gets printed when you execute the following code:

```
HashMap<Integer, String> map1 = new HashMap<Integer, String>();
HashMap<Integer, String> map2 = new HashMap<Integer, String>();
map1.put(1, "One");
map2.put(1, "One");

System.out.println("map1 == map2: " + (map1 == map2));        output:_____

System.out.println("map1.equals(map2): " + map1.equals(map2));   output:_____
```

Use the following code to answer the next three questions:

```
public class StaticMystery {
	private String var;
	public StaticMystery(String var) {
		this.var = var;
	}
	public String getVar() {
		return this.var;
	}
	public void fun() {
		//cool code
	}
	public static void staticFun() {
		//more cool code
	}
	public static void main(String[] args) {

	}
}
```

12. Write code you would put in main to call fun() (hint: it's not static, so you'll need to construct an object first)

13. Write code you would put in main to call staticFun()

14. Why couldn't I change the function getVar() to be static?

15. Recall the `Point` example class and the two ways of calculating distance (static/instance). Assuming you have two variables `a, b` which are `Points`, show the code for invoking distance calculation: (method names: `distanceBetween, distanceTo`)

instance method: _____

static method: _____