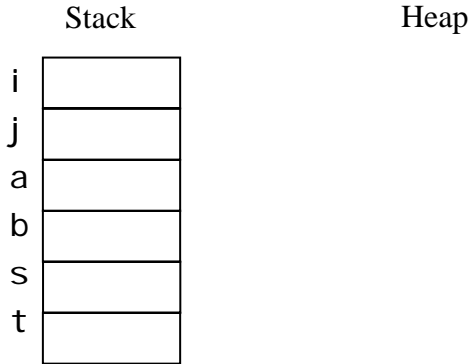


NAME & Id: _____ .

Q1 Illustrate the state of the stack and heap after the following local variable declarations have been processed.

```
int i = 6;
int j;
int a[] = {1, 2, 3};
int[] b = new int[2];
String s = "abc";
String t = null;
```



Q2 Given the declarations below, what will be the value of b? Is this actually legal code; will an exception be thrown?

```
String s = "abc";
Object o = "abc";
boolean b = o.equals(s);
```

Q3 Consider the given code (note that `println` represents `System.out.println`). What will the output be after running `main()`?

<pre>class P { static int rate = 1; static String m1() { return "P.m1"; } static String m2() { return "P.m2"; } String r1() { return "P.r1: " + rate; } String r2() { return "P.r2: " + rate; } }</pre>	<pre>class C extends P { static int rate = 2; static String m1() { return "C.m1"; } String r1() { return "C.r1: " + rate; } }</pre>	<pre>class Main { static public void main(String args[]) { P p = new C(); println(p.m1()); println(p.m2()); println(p.r1()); println(p.r2()); println(p.rate); C c = new C(); println(c.m1()); println(c.m2()); println(c.r1()); println(c.r2()); println(c.rate); } }</pre>
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Q4 Draw the state of the stack and the heap before and after statement (1) has been executed.

```
String t = "a";
String s = "b";
t = t + "z"; // (1)
```