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Skill 20.01: Exercise 1

Consider the following code,

```
int a = 3;
int b = a;
b = 100;

int[] c = {1, 2, 3, 4};
int[] d = c;
d[1] = 99;
d = new int[5];

int[] e = {5, 6, 7, 8};
int[] f = {5, 6, 7, 8};

f[1] = 98;
e = f;

String g = "hello";
String h = g;
h = "goodbye";
```

(a) What values are stored in d after the above code is executed?

(b) What values are stored in c after the above code is executed?

(c) What is the value of b after the above code is executed?

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Skill 20.02: Exercise 1

Refer to the code below to answer the following,

```
public class Tester
{
    public static void main(String args[ ])
    {
        int s[ ] = {1, 2, 3, 4, 5, 6};

        for(int g = 0; g < s.length; g++)
            System.out.print(s[s] + " ");
        System.out.print("\n");

        testMethod(s);

        for(int g = 0; g < s.length; g++)
            System.out.print(s[g] + " ");
    }

    public static void testMethod(int pp[ ])
    {
        int len = pp.length;
        int t2[ ] = new int[len];

        for(int j = 0; j < len; j++)
            t2[j] = pp[len - j - 1];

        for(int k = 0; k < t2.length; k++)
            System.out.print(t2[k] + " ");

        System.out.print("\n");
        pp = t2;
    }
}
```

Complete the stack and heap diagram, then indicate the output that would be printed

Stack	Heap	Output

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Skill 20.02 Exercise 2

```
public class Tester {
    public static void main(String args[]) {

        int[] prf = { 13, 22, 89, 15 };
        double d = 30.89;
        Circle myCir = new Circle(18); //sets rad to 18
        myCir.rad = 14;
        fg(prf, d, myCir);
        System.out.println(d);
        System.out.println(prf[2]);
        System.out.println(myCir.rad);
    }

    public static void fg(int[] x, double d, Circle c) {

        d++;
        x[2] = 16;
        c.rad = 122;
        System.out.println(d++);
        int nn[] = new int[x.length];
        nn[3] = x[0];
        x = nn;
    }
}
```

Complete the stack and heap diagram, then answer the questions

Stack	Heap
What is the output of <code>System.out.println(d);</code> in main?	
What is the output of <code>System.out.println(prf[2]);</code> in main?	

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What is the output of `System.out.println(myCir.rad);` in main?

What is the output of `System.out.println(d++);` in the `fg` method?

Skill 20.03 Exercise 3

```
public class Tester {  
  
    public static void main(String[] args){  
        double b[] = new double[10];  
        b[3] = 19;  
        BankAccount myAccount = new BankAccount(79); //sets balance to 79  
        int y = 39;  
        method1(y, b, myAccount);  
        BankAccount anotherAccount = myAccount;  
        anotherAccount.deposit = 200; // adds 20 to the balance  
        System.out.println(y + " " + b[3] + " " + myAccount.balance);  
    }  
  
    public static void method1(int x, double a[], BankAccount theAccount){  
        x = 332;  
        a[3] = -54;  
        theAccount.balance = 702;  
    }  
}
```

Draw the stack-heap diagram for the code block above

Stack

Heap

AP Computer Science A
Ticket Out the Door
Set 20: Passing by reference and by value

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Indicate what is printed