Array Worksheet Name:

Given the following:

int i = 3, x = -1, y = 100;

int[] arr = {10,15,7,20,11,2};

Show the values in x and y after executing each of the following:

1. x = arr[3]; x=20

2. x = 2 \* arr[0]; //x=20

3. x = arr[1] + arr[2]; //x=22

4. x = arr[i] + i; y = x+**arr**[5];x=23,y=25

5. x = arr[i] + 1;y = arr[i+1]; x=21 y=11

Given the following array:

int[] a = new int[10];

Assume that a has been initialized with random integers. Write a loop to do each of the following:

6. Add 1 to every element of a.

for(int i=0;i<a.length;i++)

a[i]=a[i]+1;

7. Count the number of negative numbers in a.

int count=0;

for(int i=0;i<a.length;i++){

if(a[i]<0)

count++;

}

8. Create a new array b which is the same size as a, and copy all elements from a into b.

int[] b=new int[a.length];

for(int i=0;i<a.length;i++)

b[i]=a[i];

9. Print the elements of a in reverse order, separated by spaces.

for(int i=a.length-1;i>=0;i--)

System.out.print(a[i]+ “ ”);

10. Count the number of elements in a that have values between 10 and 20 inclusive.

int count=0;

for(int i=0;i<a.length;i++)

if(a[i]>=10 && a[i]<=20)

count++;

11. Array Mystery

Consider the following method:

public static void arrayMystery(int[] a) {

for (int i = 1; i < a.length; i++) {

a[i] = i + a[i - 1] - a[i];

}

}

Indicate in the right-hand column what values would be stored in the array after the method arrayMystery executes if the integer array in the left-hand column is passed as a parameter to it.

|  |  |
| --- | --- |
| Original Contents of Array | Final Contents of Array |
| int[] a1 = {7};  arrayMystery(a1);  int[] a2 = {4, 3, 6};  arrayMystery(a2);  int[] a3 = {7, 4, 8, 6, 2};  arrayMystery(a3);  int[] a4 = {10, 2, 5, 10};  arrayMystery(a4);  int[] a5 = {2, 4, -1, 6, -2, 8};  arrayMystery(a5); | \_\_\_\_\_\_\_\_{7} \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_{4,2,-2}\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  {7,4,-2,-5,-3}\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_{10,9,6,-1}\_\_\_\_\_\_\_\_\_\_\_\_\_  {2,-1,2,-1,5,2}\_\_\_\_\_\_\_\_\_\_\_\_ |

**12. Array Mystery**   
Consider the following method:

public static int arrayMystery(int[] array) {

int x = 0;

for (int i = 0; i < array.length - 1; i++) {

if (array[i] > array[i + 1]) {

x++;

}

}

return x;

}

In the left-hand column below are specific arrays of integers. Indicate in the right-hand column what value would be returned by method arrayMystery if the integer array in the left-hand column is passed as its parameter.

|  |  |
| --- | --- |
| Original Contents of Array | Value Returned |
| int[] a1 = {8};  int result1 = **arrayMystery(a1);**  int[] a2 = {14, 7};  int result2 = **arrayMystery(a2)**;  int[] a3 = {7, 1, 3, 2, 0, 4};  int result3 = **arrayMystery(a3);**  int[] a4 = {10, 8, 9, 5, 6};  int result4 = **arrayMystery(a4);**  int[] a5 = {8, 10, 8, 6, 4, 2};  int result5 = **arrayMystery(a5);** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_0\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_1\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_3\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_2\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4 |