Data Type	Javascript Code

Number	```var n = 42;```
	```var m = 4.2;```
	```var o = 0.42;```

String	```var s = "Hello, world!";``` ```var t = "ILLINOIS";```

Function	var f = function(n){
	   return n+1;
	}

Array (List)	var a = [1,2,3,4,5];

Keyword	Javascript Code

if	```if (x < 10) {```
	  ```...```
	```} else {```
	  ```...```
	```}```

For loop	```for (var i = 0; i < 10; i++) {```
	  ```...```
	  ```// Runs 10 times```
	  ```...```
	```}```

Calculate the average:

```
var a = [80,100,90,95]

var sum = 0;
var count = 0;
for (var i = 0; i<a.length ; i++) {
    sum = sum+a[i];
    count = count+1;
};

alert(sum/count)
```

Puzzle #1: What is the value of the variable d after the code executes?

```
var d = 0;
for (var i = 0;i<5;i++) {
    d = d+i
}
```

First run: i=0,   d = d+i, d = 0+0 = 0
Second run: i=1,   d = d+i, d = 0+1 = 1
Thrid run: i=2,   d = d+i, d = 1+2 = 3
Fourth run: i= 3,   d = d+i, d = 3+3 = 6   (5) i=4: d = d+i, d=6+4 = **10**

Answer: D

Puzzle #2: What is the value of the variable k after the code executes?

```
var k = 17;
var a = [3,4,5]
for (var i =0;i<a.length;i++){
    k = k-a[i];
}
```

First run: k = 17, i = 0, a[i]=a[0]=3, k = k-a[i]=17-3=14
Second run:k=17,i=1, a[i]=a[1]=4, k = k-a[i]=14-4=10
Third run: k=16,i=2, a[i]=a[2]=5, k = k-a[i]=10-5=**5**

Puzzle #3: Create a function called *calculate* that takes in one argument, an array, and returns the final price. The final price is the total of all of the items in the card and has the correct discount applied.

```
var calculate = function(cart){
    var total = 0;
    for (var i = 0;i<cart.length;i++){
        total = total+cart[i];
    }

    var r = 0;

    if (total>=150) {
        r = total-total*0.4;
    }

    else if (total>=50) {
        r = total-total*0.1;
    }

    else {
        r = total;
    }
    return total;
}
```

Puzzle #4-6 What are the values of the variables x,y,x?

```
var s = "Hello, world!";
var x = s.length;
```

x = 13 (Assume there is a space between comma and w.

```
var a = [2, 4, 6, 8, 10];
var y = a.length;
```

y = 5

```
var s2 = "Hello, world!";
var z = s2.charAt(4);
        // Same as s2[4]
```

z = 'o'