Binary, ASCII, and Variables REVIEW | 2013

When you instantiate a variable, what two parts does the computer require you to write?

The " = " in Processing is equivalent to what BYOB block?

Create the following:

1. A container to store a letter grade
2. A variable named `avg` that stores a real number
3. A 64 bit number that could be used to store the number of people in the world
4. A 32 bit real number called `pi` that stores the value 3.141.
5. Assume a variable called `val` is already created. Increase `val` by one:
6. Take a variable called `cool` and add twice the value of `val` to `cool`:

What are the values of the variables `num1` and `num2` after each segment of code is executed?

```
int num1 = 5;
int num2 = 7;
num1 = num1 * -1;
num2 = num1 + num2;
```

```
int num1 = 0;
int num2 = 1;
num1 = num1 * -1;
num1 = num1 - num2 * 2;
```

Convert the following numbers from base 10 into base 2

5 _____

53 _____

Convert from base 2 to base 10

0011 0010 _____

1000 1100 _____

Convert from base 16 to base 10

49 _____

BAD _____

Convert from base 16 to base 2

7F2 _____

Convert from base 2 to base 16

1001 1100 _____

Use the ASCII table to fill in the following blanks:

Character	Decimal Number	Binary Number
K		

List the three rules to help you remember what variables will fit into another variable

1)

2)

3)

Name : _____ **Date :** _____

VARIABLES / DATA TYPES QUIZ 2A

DIRECTIONS : Fill in each blank with the correct answer/output. Assume each statement happens in order and that one statement may affect the next statement. If the code would generate an error, write ERROR in the answer blank for that code.

```
char cOne = 'I';
byte bOne = 28;
int iOne = 153;
float fOne = 7.1f;
double dOne = 19.3;
boolean stop = false;
String word = "grid world";
```

```
System.out.println(cOne);                    // LINE 1
System.out.println(iOne);                    // LINE 2
System.out.println(dOne);                    // LINE 3
iOne = bOne;
System.out.println(iOne);                    // LINE 4
System.out.println(stop);                    // LINE 5
dOne = fOne;
System.out.println(dOne);                    // LINE 6
iOne = cOne;
System.out.println(iOne);                    // LINE 7
dOne = cOne;
System.out.println(dOne);                    // LINE 8
System.out.println(word);                    // LINE 9
iOne = fOne;
System.out.println(iOne);                    // LINE 10
```

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

DIRECTIONS : Fill in each blank with the correct answer. Multiple answers are possible.

11. Which data type takes up 8 bits of memory? _____
12. Which data type takes up 32 bits of memory? _____