Review (Chapters 1 and 2)  

Name: ___________________  Date: _______

1.) How many bits are in a byte? __8__

2.) Am I Hardware or software? Check the appropriate box

<table>
<thead>
<tr>
<th></th>
<th>Hardware</th>
<th>Software</th>
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<tbody>
<tr>
<td>Eclipse</td>
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<td>Mac OS X</td>
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<td>Monitor</td>
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<td>Microsoft Word</td>
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<td>Hard drive</td>
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3.) _____CPU_________ is known as “the brain” of the computer.

4.) The two values of a bit are _0_ and _1_.

5.) Write the line of code that would print out the line:

   ```java
   System.out.println("COMP110 is my favorite class");
   ```

6.) Declare a variable of type float with the identifier, myFloat, and initialize the value to 4.6.

   ```java
   float myFloat = 4.6;
   ```
7.) Write the code to read in an integer from keyboard input. (two lines of code)

Scanner keyboard = new Scanner(System.in);
int myInt = keyboard.nextInt();

8.) In the code that follows, underline all Classes, circle all objects, draw boxes around all methods, and draw a line through all arguments.

public class MyProgram
{
  public static void main(String[] args)
  {
    String myString = "This is a string";
    int len = myString.length();
    System.out.print("the length is "+len);
    String shortString = myString.substring(10);
  }
}

9.) What data value is stored in myDouble? (remember that 1 and 2 are integers)

double myDouble = ( 1 / 2 ) * 5.0;

0

(1 / 2) is integer division and equals zero

10.) What data value is stored in myDouble now?

double myDouble = ( 1.0 / 2.0 ) * 5.0;

2.5

11.) Write down three legal variable names for Java.

  name1 name_two nameThree

12.) Write down three illegal variable names for Java.

  1name name_two name-three
13.) Write down the declaration for two variables called miles and time. Declare miles as type int and initialize it to zero. Declare time as type double and initialize it to 40.5.
   int miles = 0;
   double time = 40.5;

14.) What is the output produced by the following lines of program code?

   char a, b;
   a = 'b';
   System.out.println(a);
   b = 'c';
   System.out.println(b);
   a = b;
   System.out.println(a);

   b
   c
   c

15.) Suppose that mary is an object of class Person, and suppose that increaseAge is a method of class Person that uses one argument, an integer. Write the invocation of the method increaseAge for the object mary using the argument 5.

   mary.increaseAge(5);

16.) $5 \div 2 = 1$

   $12 \div 4 = 0$

   $82 \div 60 = 22$

   $24 \div 14 = 10$

17.) What is the value of myInt after each line of code is executed?
```java
int myInt = 0;
myInt++;
myInt = myInt + 5;
myInt -= 3;
System.out.println("the value is: ", myInt);
```

18.) What kind of error would you get from the following line of code?

```java
byte b1 = 5
```

syntax error

19.) The factorial (denoted ! in mathematics) of a number is the product of that number and all positive integers less than it. Examples:

\[3! = 3 \times 2 \times 1 = 6\]
\[5! = 5 \times 4 \times 3 \times 2 \times 1 = 120\]

Write pseudocode that prompts the user for an integer and then outputs the factorial of that number.

```
Prompt user for integer
Declare total variable of type int
While integer is strictly greater than zero
    total = integer * (integer – 1)
    subtract one from integer
print out total
```