Peer Instruction 3

Math, Characters, Strings
Which line correctly creates the myString object with the text "Hello World"?

Select the one correct answer.

A. String myString = (Hello World);
B. String myString = 'Hello World';
C. String myString = "Hello World";
D. String myString = new String(Hello World);
E. None of the above

Correct answer is C, need double quotes for String literal.
Bonus: What is syntax without shortcut? Answer: String myString = new String(“Hello World”);
Which code correctly finds the index of the first instance of myChar in myString?

char myChar = 'a';
String myString = "Java";

A. myString.charAt(myChar);
B. myString.instanceOf(myChar);
C. myString.indexOf(myChar);
D. None of the above

Correct answer is C, indexOf goes from char to index, charAt goes from index to char.
What will the code shown below print to the console?

String s = "Java is the best";
char c = 'a';
System.out.println(s.length() + " " + s.charAt(2) + " " + s.indexOf(c));

A. 16 a 1, 3  
B. 16 v 1, 3  
C. 16 v 1  
D. 16 v 3

Correct answer is C, just count characters for length, charAt uses index, indexOf finds first only.
What will the code shown below print to the console?

```java
String s = "Computer science is okay!";
System.out.println(s.substring(16));
```

A. "Computer science"
B. " is okay!"
C. "is okay!"
D. "Computer scienceis okay!"
E. None of the above

Correct answer is C, substring omits last index, and indices are zero based.
What will the code shown below print to the console?

```java
String s = "Computer science is okay!";
System.out.println(s.substr(0, 16) + " "+
    s.charAt(7) + s.charAt(20) + s.charAt(10) +
    s.charAt(21) + s.charAt(9) + s.charAt(s.length() - 1));
```

A. "Computer Science  okay!"
B. "Computer Science ersoy!"
C. "Computer Science rocks!"
D. None of the above

Correct answer is C, substring omits last index, and indices are zero based.
What does the code shown below print to the console?

```java
System.out.print(Math.toDegrees(Math.PI * 2.0) + ",");
System.out.print(Math.sqrt(64.0) + ",");
System.out.println("%.4f\n", Math.min(Math.PI, 1.2345));
```

A. 180.0, 64.0, 3.1416  
B. 180.0, 64.0, 1.2345  
C. 360.0, 8.0, 3.1416  
D. 360.0, 8.0, 1.2345

Correct answer is D, 2pi = 360 degrees, Math.sqrt is obvious, Math.min returns smallest.
What is objectionable with respect to the code shown below?

1. Math math = new Math();
2. System.out.println(math.sin(Math.toRadians(90)));
3. System.out.println(Math.min(1.0, 2.0, 3.0));

A. Instantiation of Math object not allowed. (Line 1)
B. Object instead of class to call method? (Line 2)
C. Too many parameter to method! (Line 3)
D. All of the above
E. Nothing is wrong

Correct answer is D, code is completely wrong headed.
What will the code shown below print to the console?

```java
System.out.printf("%.6f\n", 52.978387623);
```

A. 52.978387  
B. 52.978388  
C. .978388    
D. None of the above

Correct answer is C, does not touch left of decimal point, rounds to specified number of digits.
What is wrong with the Java printf statement shown below?

```java
System.out.printf("i = %d, j = %5.2f\n", i, j, k);
```

A. Invalid syntax on formatter for j.
B. Cannot apply floating point formatter to j.
C. Missing formatter for k, will get an exception.
D. Missing formatter for k, but will still execute.
E. All of the above.

Answer is D), MissingFormatException for too many formatters not too few, A) and B) are incorrect.
Bonus: What actually happens? Answer: Prints the first two arguments, never accesses the third!
What will the code shown below print to the console?

```
System.out.println(('a' < 'z') + \""," + ('1' < 'W'));
```

A. true, true  
B. true, false  
C. false, true  
D. false, false  
E. None of the above

Correct answer is A, need ASCII chart to answer this question.  
Bonus: What do you think about none of the above as an answer? Answer: Need to revisit booleans!
What will the code shown below print to the console?

```java
System.out.println(Character.isDigit('A') + "," +
    Character.isLetter('z') + "," +
    Character.isLowerCase('&') + "," +
    Character.isLetter("5A%".charAt(1));
```

A. true,false,true,false  
B. false,true,false,true  
C. false,true,false,false  
D. false,true,true,true

Correct answer is B, note the extraction of one character from a String.
What are the values of the double and integer after the code shown below executes?

```java
String myString = "1.234";
double myDouble = Double.parseDouble(myString);
int myInteger = Integer.parseInt(myString);
```

A. 1.234, 0
B. 1.234, 1
C. 1.234, 2
D. Program gets an exception!

Correct answer is D, cannot turn the String “1.234” into an integer so NumberFormatException.