Peer Instruction 1

Elementary Programming
Which of the following variable declarations will not compile?

Please select the single correct answer.

A. \( \text{int i = 778899;} \)
B. \( \text{double x = 5.43212345;} \)
C. \( \text{char c = "&";} \)
D. \( \text{short s0,s1=567,s3;} \)
E. All declarations are correct!

Correct answer is C, needs a character literal with single quotes instead of a string.
Which of the statements below that declare and initialize an integer will not compile?

Please select the single correct answer.
A. short so = 7809;
B. int i1 = 345.678;
C. double do = 3357872;
D. double d1 = 35.7893993;
E. All of the above

Correct answer is B, trying to put a double into an integer without type casting.
Which of the following lists of variable names are legal identifiers in Java?

Please select the single correct answer.

A. file3, String, int, _name13
B. 3file, name3, $real0
C. file3, string, #hashtag, double
D. file3, string, int2, _name1
E. None of the above

Correct answer is D, no illegal characters, no numbers, no reserved words, no classes, underscore okay.
What is the difference between the primitive types shown below?

byte, short, int, long

A. No difference except for the names!
B. Some represent integers, others real numbers
C. Each type has a different size in memory
D. Some types are signed, some are unsigned
E. None of the above

Correct answer is C, 8-bit, 16-bit, 32-bit, and 64-bit.
What will the code below assign to the value of the integer variable?

```java
int myInteger = 9/4 + 44/11 + 11%3 + (6/4);
```

A. 9  
B. 9.75  
C. 10  
D. 10.25  
E. None of the above

Correct answer is A, explain integer math and modulo.
What will the code below assign to the value of the integer variable?

```java
int myInteger = 6 * 2 / 3 + 5 * 6 - 15 / 5;
```

A. 4  
B. 16  
C. 31  
D. 47  
E. None of the above

Correct answer is C, explain order of operations.
Which of the statements below does not increment (and save) the declared integer?

```java
int myInteger = 0;
A. myInteger++;
B. ++myInteger;
C. myInteger + 1;
D. myInteger += 1;
E. myInteger = myInteger + 1;
```

Correct answer is C, adds one for evaluation but does not change the value (and will not compile).
Which of the following statements will not compile because of an incorrect type cast?

Select the one correct answer.

A. int io = (char) '$';
B. int i1 = (int) 76.1234;
C. int i2 = (short) 34;
D. int i3 = (float) 3213;
E. All of the above

Correct answer is D, once you type cast to float you cannot assign to integer.
Which of the statements below successfully prints the value of the variable?

double myDouble = 1.2345;

A. System.out.println("Value = " + myDouble);
B. System.out.println("Value =", myDouble);
C. System.out.println("Value = " myDouble);
D. System.out.println("Value = myDouble");
E. None of the above

Correct answer is A, need to concatenate the string and value using + operator.
What will the code shown below print to the console?

```
System.out.printf("%.4f\n", 52.978353490);
```

A. 52.978353490  
B. 52.9783  
C. 52.9784  
D. .9783  
E. None of the above

Correct answer is C, does not touch left of decimal point, rounds to specified number of digits.
Which line successfully creates a Scanner object to read from the keyboard?

Please select the single correct answer.

A. Scanner scan;
B. Scanner scan = new Scanner();
C. Scanner scan = new Scanner("keyboard");
D. Scanner scan = new Scanner(System);
E. Scanner scan = new Scanner(System.in);

Correct answer is E, System.in is the input stream from the keyboard, C will compile!

Bonus: Why does sending a String to the constructor work? Answer: It makes a parser for the String.
Which line successfully reads an integer from the keyboard into the declared variable?

```java
int myInteger;
Scanner scan = new Scanner (System.in);
A. myInteger = scan.next();
B. myInteger = scan.nextInt;
C. myInteger = scan.nextInt();
D. myInteger = nextInt();
E. None of the above
```

Correct answer is C, must use the object to call the method, parentheses required for method calls.