



Module 2 Mastery Check

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Introducing Data Types and Operators

1. Why does Java strictly specify the range and behavior of its primitive types?
2. What is Java's character type, and how does it differ from the character type used by many other programming languages?
3. A **boolean** value can have any value you like because any non-zero value is true. True or False?
4. Given this output,

```
One
Two
Three
```

using a single string, show the **println()** statement that produced it.

5. What is wrong with this fragment?

```
for(i = 0; i < 10; i++) {
    int sum;

    sum = sum + i;
}
System.out.println("Sum is: " + sum);
```

6. Explain the difference between the prefix and postfix forms of the increment operator.
7. Show how a short-circuit AND can be used to prevent a divide-by-zero error.
8. In an expression, what type are **byte** and **short** promoted to?
9. In general, when is a cast needed?
10. Write a program that finds all of the prime numbers between 1 and 100.
11. Does the use of redundant parentheses affect program performance?
12. Does a block define a scope?