

Unit 2 Java Basics Questions and Programming Problems

True/False

Indicate whether the statement is true or false.

- _____ 1. The Java compiler recognizes nested blocks through indentation.
- _____ 2. Each line in a Java program ends with a semicolon.
- _____ 3. Text within double quotes cannot be split between two lines.
- _____ 4. The term white space refers to characters that are not part of the alphabet or numbers, such as the symbols %, &, and @.
- _____ 5. Identifiers in Java may contain any characters you can find on your keyboard.
- _____ 6. The identifiers `Maximum` and `maximum` are considered the same in Java.

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 7. Is the following statement referring to Java syntax or optional style?

A program begins with a comment.
 - a. syntax
 - b. style
- _____ 8. Is the following statement referring to Java syntax or optional style?

The names of all methods begin with a lower case letter.
 - a. syntax
 - b. style
- _____ 9. Is the following statement referring to Java syntax or optional style?

Each opening brace has a matching closing brace.
 - a. syntax
 - b. style

- _____ 10. Is the following statement referring to Java syntax or optional style?
- All statements within a pair of matching braces are indented by 2 spaces.
- a. syntax
 - b. style
- _____ 11. Is the following statement referring to Java syntax or optional style?
- A closing brace is placed on a separate line.
- a. syntax
 - b. style
- _____ 12. Is the following statement referring to Java syntax or optional style?
- A class has a blank line before each method declaration.
- a. syntax
 - b. style
- _____ 13. Is the following statement referring to Java syntax or optional style?
- The word IF is not used as a name for a variable.
- a. syntax
 - b. style
- _____ 14. Which of the following pairs of variables are different from each other?
- a. Total and total
 - b. case and CASE
 - c. codeTwo and code2
 - d. oneMore and one_More
 - e. all of the above
- _____ 15. Which of the following is a valid Java identifier?
- a. 14andCounting
 - b. max_value
 - c. 123
 - d. %taxRate
 - e. hook&ladder

- _____ 16. Which of the following is not a valid Java identifier?
- a. Factorial
 - b. anExtremelyLongIdentifierIfYouAskMe
 - c. 2ndLevel
 - d. level2
 - e. highest\$

Short Answer

17. In

```
if (y > 150)
{
    sky = Color.PINK;
}
```

are the parentheses required by the Java syntax, or are they a matter of style? What about the braces?

18. Restore line spacing and proper indentation in the following code:

```
public boolean badIndentation(int maxLines) {int
lineCount = 3;
while(lineCount < maxLines) { System.out.println
(lineCount); lineCount++;} return true; }
```

19. Categorize each of the following situations as a compile-time error, run-time error, or logical error.

- multiplying two numbers when you meant to add them
- dividing by zero
- forgetting a semicolon at the end of a programming statement
- spelling a word wrong in the output
- producing inaccurate results
- typing a { when you should have typed (

20. Give examples of the two types of Java comments and explain the differences between them.

21. What do we mean by the syntax rules of a programming language?

Essay

22. Write an application that displays your initials in large block letters. Make each large letter out of the corresponding regular character. For example:

JJJJJJJJJJJJJJJJJJJJJ	AAAAAAAAAA	LLLL
JJJJJJJJJJJJJJJJJJJJJ	AAAAAAAAAAAA	LLLL
JJJJ	AAA AAA	LLLL
JJJJ	AAA AAA	LLLL
JJJJ	AAAAAAAAAAAA	LLLL
J JJJJ	AAAAAAAAAAAA	LLLL
JJ JJJJ	AAA AAA	LLLL
JJJJJJJJJJJJJJJJJJJ	AAA AAA	LLLLLLLLLLLLLLLL
JJJJJJJJJJJJJJJJJJJ	AAA AAA	LLLLLLLLLLLLLLLL

23. Write an application that prints the following diamond shape. Don't print any unneeded characters. (That is, don't make any character string longer than it has to be.)

```
  *
 ***
*****
*****
*****
*****
***
  *
```

24. Enter, compile, and run the following application:

```
public class Test
{
    public static void main(String [ ] args)
    {
        System.out.println("An Emergency Broadcast");
    }
}
```

25. Introduce the following errors, one at a time, to the program from the last question (i.e. the Test class). Record any error messages that the compiler produces. Fix the previous error each time before you introduce a new one. If no error messages are produced, explain why. Try to predict what will happen before you make each change.
- change Test to test
 - change Emergency to emergency
 - remove the first quotation mark in the string
 - remove the last quotation mark in the string
 - change main to man
 - change println to bogus
 - remove the semicolon at the end of the println statement
 - remove the last brace in the program