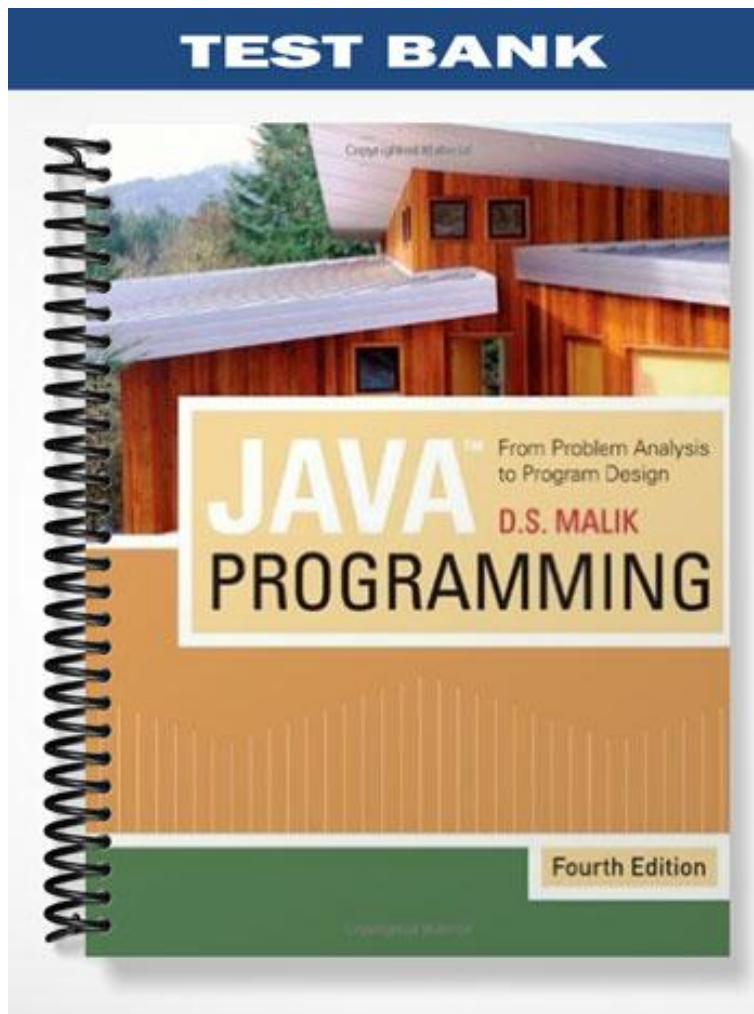


TEST BANK



JAVA™ From Problem Analysis
to Program Design
D.S. MALIK
PROGRAMMING

Fourth Edition

ch02

True/False

Indicate whether the statement is true or false.

- 1. The pair of characters `//` is used for single line comments.
- 2. Multiple line comments are enclosed between `*/` and `/*`.
- 3. The `==` is a special symbol in Java.
- 4. `throws` is a reserved word in Java.
- 5. The following is a legal Java identifier: `twoStars**`
- 6. An identifier can be any sequence of characters and integers.
- 7. A bit is an example of an integral data type.
- 8. The symbol `'5'` does not belong to the `char` data type because 5 is a digit.
- 9. Each character has a specific non-negative integer value in the Unicode character set.
- 10. The horizontal tab character is represented in Java as `'t\'`.
- 11. The data type `float` is a floating-point data type.
- 12. The number of significant digits in a `double` variable is up to 15.
- 13. A value such as `'d'` is called a character constant.
- 14. An operator that has only one operand is called a unique operator.
- 15. Multiplication and division have the same operator precedence.
- 16. Operators of the same precedence are evaluated from right to left.
- 17. If a Java arithmetic expression has no parentheses, operators are evaluated from left to right.
- 18. When evaluating a mixed expression, all integer operands are converted to floating-point numbers with the decimal part of zero.
- 19. In Java, the value of the expression `28.0 / 7` is `4.0`.
- 20. When a value of one data type is automatically changed to another data type, an implicit type coercion has occurred.
- 21. Suppose `x = 7.8`. The value of the expression `(int)(x + 0.5)` is 8.
- 22. Suppose `x = 18.6`. The output of the statement `System.out.println((int)(x) / 3);` is 6.
- 23. Suppose `x = 19.5`. The output of the statement `System.out.println((int)(x) % 3);` is 1.
- 24. The null string contains only the blank character.
- 25. A string is a sequence of zero or more characters.
- 26. The value of a variable may change during program execution.
- 27. If `a = 4;` and `b = 3;`, then after the statement `a = b;` executes, the value of `b` is 4 and the value of `a` is 3.

- ___ 28. The Java language is strongly typed.
- ___ 29. Java automatically initializes all variables.
- ___ 30. The following statement creates the input stream object `console` and associates it with the standard input device.

```
static Scanner console = new Scanner(System.input);
```

- ___ 31. Suppose `console` is a `Scanner` object initialized with the standard input device. The expression `console.nextInt();` is used to read one `int` value and the expression `console.nextDouble();` is used to read two `int` values.
- ___ 32. Suppose `console` is a `Scanner` object initialized with the standard input device and `feet` and `inches` are `int` variables. Consider the following statements:

```
feet = console.nextInt();  
inches = console.nextInt();
```

These statements require the value of `feet` and `inches` to be input on separate lines.

- ___ 33. Suppose that `ch` is a `char` variable. The following statement reads and stores a single character into `ch`, where `console` is a `Scanner` object initialized to the standard input device.

```
ch = console.next().charAt(0);
```

- ___ 34. Suppose that `index` is an `int` variable. The statement `index = index + 1;` is equivalent to `index++;`
- ___ 35. If `++x` is used in an expression, first the expression is evaluated, and then the value of `x` is incremented by 1.
- ___ 36. Suppose that `count` is an `int` variable. The statements `--count;` and `count--;` both decrement the value of `count` by 2.
- ___ 37. Suppose `x = 8`. After the execution of the statement `y = x++;` `y` is 8 and `x` is 10.
- ___ 38. Suppose `a = 4`. After the execution of the statement `b = ++a;` `b` is 5 and `a` is 6.
- ___ 39. Suppose `a = 5`. After the execution of the statement `++a;` the value of `a` is 6.
- ___ 40. Suppose `a = 15`. After the execution of the statement `--a;` the value of `a` is 14.
- ___ 41. Suppose that `alpha` and `beta` are `int` variables. The statement `alpha = beta++;` is equivalent to the statement `alpha = ++beta;`.
- ___ 42. Suppose that `alpha` and `beta` are `int` variables. The statement `alpha = --beta;` is equivalent to the statement `alpha = 1 - beta;` while the statement `alpha = beta--;` is equivalent to the statement `alpha = beta - 1;`.
- ___ 43. Both `System.out.println` and `System.out.print` can be used to output a string on the standard output device.
- ___ 44. The expression `System.out.println();` positions the insertion point at the beginning of the next line.

- ___ 45. `\n` moves the insertion point at the end of the current line.
- ___ 46. `\r` (Return) moves the insertion point to the beginning of the next line.
- ___ 47. A package is a collection of related classes.
- ___ 48. The `class Scanner` is contained in the package `java.util`.
- ___ 49. The Java source file must have a `.Jav` extension.
- ___ 50. Commas are used to separate items in a list.
- ___ 51. The following two statements are equivalent.
- `x *= y + 2;`
 - `x = x * y + 2;`
- ___ 52. Suppose that `sum` is an `int` variable. The statement
- ```
sum += 7;
```
- is equivalent to the statement
- ```
sum + 7 = sum;
```
- ___ 53. Suppose that `prod` is a `double` variable. The statement `prod *= 0;` is equivalent to the statement `prod = 0;`.

Multiple Choice

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

- ___ 54. The ___ rules of a programming language tell you which statements are legal, or accepted by the programming language.
- semantic
 - logical
 - syntax
 - grammatical
- ___ 55. Which of the following is the correct syntax for commenting in Java?
- `# Enter Comments Here`
 - `// Enter Comments Here`
 - `*/ Enter Comments Here*/`
 - `** Enter Comments Here **`
- ___ 56. Which of the following is NOT a special symbol in Java?
- `+`
 - `#`
 - `!=`
 - `?`
- ___ 57. Which of the following is a reserved word in Java?
- `Int`
 - `Double`
 - `Char`
 - None of these
- ___ 58. Which of the following is NOT a reserved word in Java?
- `double`
 - `throws`
 - `static`
 - `num`
- ___ 59. Which of the following is a valid Java identifier?
- `$pay`
 - `4myGrade!`
 - `newGrade!`
 - None of these
- ___ 60. Which of the following is a legal identifier?
- `exam1!`
 - `exam_1`
 - `1stExam`
 - `exam 1`

- ___ 61. All of the following are examples of integral data types EXCEPT ____.
- int
 - long
 - double
 - short
- ___ 62. Which of the following is a valid `int` value?
- 3279
 - 3,279
 - 3270.00
 - None of these
- ___ 63. The memory allocated for a `long` value is ____.
- 2 bytes
 - 4 bytes
 - 8 bytes
 - 16 bytes
- ___ 64. Which of the following is a valid `char` value?
- '\$ _'
 - '%'
 - 'n\''
 - None of these
- ___ 65. What is the floating-point notation for 25.611?
- 2.5E1
 - 26.000E1
 - 2.561100E1
 - 25.611000E1
- ___ 66. The memory allocated for a `double` value is ____.
- 2 bytes
 - 4 bytes
 - 8 bytes
 - 16 bytes
- ___ 67. The value of the expression `33 / 6` is ____.
- 5.5
 - 5
 - 5.0
 - 5.50
- ___ 68. The value of the expression `14 % 3` is ____.
- 1
 - 2
 - 3
 - None of these
- ___ 69. Suppose that `x`, `y` and `z` are `float` variables. The expression `(x+y)z` in Java is written as ____.
- `x + y * z`
 - `(x + y) * z`
 - `x * z + y`
 - `(x + y) z`
- ___ 70. Suppose that `x`, `y`, `z`, and `w` are `float` variables. The expression `x/(y-z)w` in Java is written as ____.
- `x / y - z * w`
 - `x / y - x / z * w`
 - `x / (y - z) * w`
 - `x / (y - z) w`
- ___ 71. The value of `12 % 14` is ____.
- 0
 - 12
 - 2
 - 6/7
- ___ 72. Operators that have two operands are called ____.
- unary operators
 - binary operators
 - operators
 - expressions
- ___ 73. The value of the expression `6 % 4 * 3` is ____.
- 0
 - 3
 - 6
 - 12
- ___ 74. The value of the expression `5 + 10 / 4 - 3` is ____.
- 0
 - 4
 - 4.5
 - 15
- ___ 75. The value of the expression `5 + 10 % 4 - 3` is ____.
- 0
 - 2
 - 4
 - 5
- ___ 76. The value of the expression `36 - 15 % 2.0 + 2` is ____.

- a. 37
b. 37.0
- c. 38
d. This is an illegal Java expression
- ___ 77. The expression `(int)8.7` evaluates to ____.
- a. 8
b. 8.0
- c. 9.0
d. 9
- ___ 78. The expression `(double)(5 + 4)` evaluates to ____.
- a. 8
b. 9
- c. 9.0
d. 10.0
- ___ 79. The expression `(int)8.3 + (int)6.5` evaluates to ____.
- a. 13
b. 14
- c. 14.8
d. 15
- ___ 80. Suppose that `x` is an `int` variable. What is the value of `x` after the following statement executes: `x = 7 + (int)(12.5) / 2;`
- a. 13
b. 13.25
- c. 13.5
d. 14
- ___ 81. Suppose that `alpha` is a `double` variable. What is the value of `alpha` after the following statement executes: `alpha = 13.5 + (double)(15) / 3;`
- a. 18.0
b. 18.5
- c. 19.0
d. None of these
- ___ 82. The length of the string `"first java program"` is:
- a. 16
b. 18
- c. 19
d. 20
- ___ 83. Which of the following statements about a named constant is NOT true?
- a. Its content cannot change during program execution.
b. Its value can be changed during program execution.
c. It is a memory location.
d. It is declared using the reserved word `final`.
- ___ 84. What type of Java statement(s) stores a value in a variable?
- a. input
b. output
c. assignment
d. Both an input statement and an assignment statement
- ___ 85. Suppose that `x` and `y` are `int` variables and `x = 7` and `y = 8`. After the statement: `x = x * y - 2;` executes, the value of `x` is ____.
- a. 42
b. 54
- c. 56
d. None of these
- ___ 86. Given

```
char ch;
int num;
double pay;
```

Which of the following assignment statements are valid?

- (i) `ch = '*';`
(ii) `pay = num * pay;`
(iii) `rate * 40 = pay;`

- a. Only (i) is valid
 b. (i) and (ii) are valid
 c. (ii) and (iii) are valid
 d. (i) and (iii) are valid
- ___ 87. Suppose that alpha and beta are int variables. The statement alpha = --beta; is equivalent to the statement(s) ____.
- a. beta = beta - 1;
 alpha = 1 - beta;
 b. beta = beta - 1;
 alpha = beta - 1;
 c. beta = beta - 1;
 alpha = beta;
 d. None of these
- ___ 88. Suppose that alpha and beta are int variables. The statement alpha = beta--; is equivalent to the statement(s) ____.
- a. alpha = 1 - beta;
 beta = beta - 1;
 b. beta = beta - 1;
 alpha = beta;
 c. alpha = beta;
 beta = beta - 1;
 d. None of these
- ___ 89. Suppose that alpha and beta are int variables. The statement alpha = beta++; is equivalent to the statement(s) ____.
- a. alpha = 1 + beta;
 beta = beta + 1;
 b. alpha = alpha + beta;
 beta = beta + 1;
 c. alpha = beta;
 beta = beta + 1;
 d. None of these
- ___ 90. Suppose that alpha and beta are int variables. The statement alpha = ++beta; is equivalent to the statement(s) ____.
- a. beta = beta + 1;
 alpha = beta;
 b. beta = beta + 1;
 alpha = 1 + beta;
 c. beta = beta + 1;
 alpha = alpha + beta;
 d. None of these
- ___ 91. Consider the following sequence of statements.

```
String str;
int num1, num2;
num1 = 18;
num2 = 30;
str = "The sum = " + num1 + num2;
```

What is the final value stored in str?

- a. The sum = 48
 b. The sum = 18 30
 c. The sum = 18 + 30
 d. The sum = 1830
- ___ 92. Suppose that x = 8 and y = 2. What is the output of the following Java statement?
- ```
System.out.println("Sum of " + x + " and " + y + " = "
 + (x + y));
```
- a. Sum of 8 and 2 is 10  
 b. Sum of x and y is 10  
 c. Sum of x and y is x + y  
 d. None of these
- \_\_\_ 93. Suppose that x = 8 and y = 2. What is the output of the following Java statement?
- ```
System.out.println("Sum of " + x + " and " + y + " = "
  + x + y);
```
- a. Sum of 8 and 2 is 10
 b. Sum of 8 and 2 is 82
 c. Sum of x and y is 10
 d. None of these

___ 94. What is the output of the following statement?

```
System.out.println("Welcome \n Home");
```

- a. WelcomeHome
- b. Welcome Home
- c. Welcome
Home
- d. Welcome \n Home

___ 95. Which of the following is the newline character?

- a. \r
- b. \n
- c. \l
- d. \b

___ 96. Consider the following program.

```
public class CircleArea
{
    static Scanner console = new Scanner(System.in);
    static final float PI = 3.14;

    public static void main(String[]args)
    {
        float r;
        float area;
        r = console.nextDouble();
        area = PI * r * r;
        System.out.println("Area = " + area);
    }
}
```

To successfully compile this program, which of the following import statement is required?

- a. import java.io;
- b. import java.util;
- c. import java.lang;
- d. No import statement is required

___ 97. Consider the following program.

```
// Insertion Point 1
public class CircleArea
{
    // Insertion Point 2
    static final float PI = 3.14

    public static void main(String[]args)
    {
        //Insertion Point 3

        float r = 2.0;
        float area;
        area = PI * r * r;
        System.out.println("Area = " + area);
    }
    // Insertion Point 4
}
```


In the above code, where do the import statements belong?

- a. Insertion Point 1
- b. Insertion Point 2
- c. Insertion Point 3
- d. Insertion Point 4

- ___ 98. ___ are executable statements that inform the user what to do.
- a. Variables
 - b. Prompt lines
 - c. Named constants
 - d. Expressions
- ___ 99. The declaration `int a, b, c;` is equivalent to which of the following?
- a. `int a , b c;`
 - b. `int a;`
`int b;`
`int c;`
 - c. `int abc;`
 - d. `int a b c;`

- ___ 100. Suppose $x = 4$ and $y = 2$. If the statement

```
x *= y;
```

is executed once, what is the value of x ?

- a. 2
- b. 4
- c. 8
- d. This is an illegal statement in Java.

ch02
Answer Section

TRUE/FALSE

- | | | |
|------------|--------|-------------------|
| 1. ANS: T | PTS: 1 | REF: 29 |
| 2. ANS: F | PTS: 1 | REF: 30 |
| 3. ANS: T | PTS: 1 | REF: 30 |
| 4. ANS: T | PTS: 1 | REF: 30 |
| 5. ANS: F | PTS: 1 | REF: 31 |
| 6. ANS: F | PTS: 1 | REF: 31 |
| 7. ANS: F | PTS: 1 | REF: 32 |
| 8. ANS: F | PTS: 1 | REF: 33 |
| 9. ANS: T | PTS: 1 | REF: 34 |
| 10. ANS: T | PTS: 1 | REF: 34 |
| 11. ANS: T | PTS: 1 | REF: 35 |
| 12. ANS: T | PTS: 1 | REF: 35 |
| 13. ANS: T | PTS: 1 | REF: 36 |
| 14. ANS: F | PTS: 1 | REF: 36 |
| 15. ANS: T | PTS: 1 | REF: 39 |
| 16. ANS: F | PTS: 1 | REF: 39 |
| 17. ANS: T | PTS: 1 | REF: 40 |
| 18. ANS: F | PTS: 1 | REF: 42 |
| 19. ANS: T | PTS: 1 | REF: 41 42 43 |
| 20. ANS: T | PTS: 1 | REF: 43 |
| 21. ANS: T | PTS: 1 | REF: 43 |
| 22. ANS: T | PTS: 1 | REF: 43 |
| 23. ANS: T | PTS: 1 | REF: 43 |
| 24. ANS: F | PTS: 1 | REF: 45 |
| 25. ANS: T | PTS: 1 | REF: 45 |
| 26. ANS: T | PTS: 1 | REF: 50 |
| 27. ANS: F | PTS: 1 | REF: 51 |
| 28. ANS: T | PTS: 1 | REF: 54 |
| 29. ANS: F | PTS: 1 | REF: 55 |
| 30. ANS: F | PTS: 1 | REF: 56 |
| 31. ANS: F | PTS: 1 | REF: 56 |
| 32. ANS: F | PTS: 1 | REF: 58 |
| 33. ANS: T | PTS: 1 | REF: 61 |
| 34. ANS: T | PTS: 1 | REF: 64 |
| 35. ANS: F | PTS: 1 | REF: 64 |
| 36. ANS: F | PTS: 1 | REF: 64 65 |
| 37. ANS: F | PTS: 1 | REF: 64 65 |
| 38. ANS: F | PTS: 1 | REF: 64 65 |
| 39. ANS: T | PTS: 1 | REF: 64 65 |
| 40. ANS: T | PTS: 1 | REF: 64 65 |
| 41. ANS: F | PTS: 1 | REF: 64 65 |

42.	ANS: F	PTS: 1	REF: 64 65
43.	ANS: T	PTS: 1	REF: 66
44.	ANS: T	PTS: 1	REF: 66
45.	ANS: F	PTS: 1	REF: 67 70
46.	ANS: F	PTS: 1	REF: 70
47.	ANS: T	PTS: 1	REF: 71
48.	ANS: F	PTS: 1	REF: 72
49.	ANS: F	PTS: 1	REF: 73
50.	ANS: T	PTS: 1	REF: 78
51.	ANS: F	PTS: 1	REF: 82 83
52.	ANS: F	PTS: 1	REF: 82 83
53.	ANS: T	PTS: 1	REF: 82 83

MULTIPLE CHOICE

54.	ANS: C	PTS: 1	REF: 29
55.	ANS: B	PTS: 1	REF: 29 30
56.	ANS: B	PTS: 1	REF: 30
57.	ANS: D	PTS: 1	REF: 30
58.	ANS: D	PTS: 1	REF: 30
59.	ANS: A	PTS: 1	REF: 31
60.	ANS: B	PTS: 1	REF: 31
61.	ANS: C	PTS: 1	REF: 32
62.	ANS: A	PTS: 1	REF: 33
63.	ANS: C	PTS: 1	REF: 33
64.	ANS: B	PTS: 1	REF: 33 34
65.	ANS: C	PTS: 1	REF: 35
66.	ANS: C	PTS: 1	REF: 35
67.	ANS: B	PTS: 1	REF: 36 37
68.	ANS: B	PTS: 1	REF: 36 37
69.	ANS: B	PTS: 1	REF: 36
70.	ANS: C	PTS: 1	REF: 36
71.	ANS: B	PTS: 1	REF: 36 37
72.	ANS: B	PTS: 1	REF: 36
73.	ANS: C	PTS: 1	REF: 36 37
74.	ANS: B	PTS: 1	REF: 36 37
75.	ANS: C	PTS: 1	REF: 36 37
76.	ANS: B	PTS: 1	REF: 35 37 38
77.	ANS: A	PTS: 1	REF: 43
78.	ANS: C	PTS: 1	REF: 43
79.	ANS: B	PTS: 1	REF: 43 44
80.	ANS: A	PTS: 1	REF: 43 44
81.	ANS: B	PTS: 1	REF: 43 44
82.	ANS: B	PTS: 1	REF: 45
83.	ANS: B	PTS: 1	REF: 48
84.	ANS: D	PTS: 1	REF: 51

85.	ANS: B	PTS: 1	REF: 51
86.	ANS: B	PTS: 1	REF: 51
87.	ANS: C	PTS: 1	REF: 64 65
88.	ANS: C	PTS: 1	REF: 64 65
89.	ANS: C	PTS: 1	REF: 64 65
90.	ANS: A	PTS: 1	REF: 64 65
91.	ANS: D	PTS: 1	REF: 51 46
92.	ANS: A	PTS: 1	REF: 68 46
93.	ANS: B	PTS: 1	REF: 68 46
94.	ANS: C	PTS: 1	REF: 67 68
95.	ANS: B	PTS: 1	REF: 70
96.	ANS: B	PTS: 1	REF: 71 72
97.	ANS: A	PTS: 1	REF: 75
98.	ANS: B	PTS: 1	REF: 78
99.	ANS: B	PTS: 1	REF: 79 80
100.	ANS: C	PTS: 1	REF: 82 83