Java Module – Lesson 2A – Practice Exercise

Completion

Complete each sentence or statement.

1. The three main data types used in a typical Java program are: ______________, ______________, and ______________.

2. In general, data types that are simple in nature are referred to as p__________, and more complex data types are called o__________.

3. The four main primitive data types are: ________, ________, ________, and ________.

4. The four other less used primitive data types are: ________, ________, ________, and ________.

5. The main object data type used so far is the S__________.

6. Describe the difference between Strings and chars, discussing length and symbols used.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

7. List the five parts of a typical initialization statement
   __________, __________, __________, __________, __________

8. Rewrite the following initialization statement as two separate statements: a declare and an assignment.
   int x = 5;
   __________________
   __________;
   __________;

9. Rewrite the following initialization statement as two separate statements: a declare and an assignment.
   double wage = 9.25;
   __________________
   __________________
   __________________
Java Module – Lesson 2A – Practice Exercise (cont.)

10. Fill in the blanks below with appropriate data about you.
    
    String name = ______________________;
    int age = ______________________;
    double wage = ______________________;
    char initial = ______________________;
    boolean smart = ______________________;

11. A variable that is permanently assigned inside a program is called a ___________ and uses the word ___________ to indicate this.

12. The difference between a primitive and an object is that a primitive is a memory location that actually contains a _______________, but an object is a memory location that contains the _______________ _______________ of a value.

13. List the absolute “must” rules for creating valid Java identifiers.
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________

14. List the “good idea” rules for creating valid Java identifiers.
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________

15. List the conventions, or “commonly agreed upon” rules for creating valid Java identifiers.
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
    ________________________________________________________________
Java Module – Lesson 2A – Practice Exercise (cont.)

16. For what two word phrase is “bit” an abbreviation? __________  _______________

17. When the maximum or minimum value is exceeded by 1 in an outward direction, such as adding 1 to the maximum, or subtracting 1 from the minimum, this causes a computer phenomenon called ___________________.

18. When 1 is added to the maximum value of a data type, what value is the result of this? __________________________________________

19. When 1 is subtracted from the minimum value of a data type, what value is the result of this? __________________________________________

20. In general terms, the word **transcendental** refers to concepts, ideas, and beliefs that come to us from beyond our senses, things we cannot see, hear, touch, feel, or taste, but have a “gut feeling” about. Similarly, in mathematics, there are certain numbers that are referred to as “transcendental numbers”, in the fact that they are irrational (cannot be expressed as a ratio of discreet values), and highly significant in mathematics. Two well-known examples of these numbers are represented as the Java mathematical constants _________ (the ratio of the circumference of a circle to its diameter) and _________ (the base of the natural logarithms).

**True/False**

___ 21. final int x = 4;
    x = 5;

___ 22. char a;
    a = 'a';

___ 23. first name

___ 24. String word = 'hello';

___ 25. boolean flag = "true";

___ 26. int x = 45;

___ 27. 5_star

___ 28. FLAG

___ 29. final char a = 'a';

___ 30. main

___ 31. myName

___ 32. final char a;
    a = 'a';

___ 33. $cost

___ 34. double d;
Java Module – Lesson 2A – Practice Exercise (cont.)

Matching

Match each value with the correct Java constant.

a. Byte.MIN_VALUE  
e. Byte.MAX_VALUE
b. Short.MIN_VALUE  
f. Short.MAX_VALUE
c. Integer.MIN_VALUE  
g. Integer.MAX_VALUE
d. Long.MIN_VALUE  
h. Long.MAX_VALUE

35. -9223372036854775808  
36. Long.MAX_VALUE+1
37. -32768  
38. -128
39. Short.MAX_VALUE+1  
40. Integer.MAX_VALUE+1
41. Integer.MIN_VALUE-1  
42. 127
43. Byte.MAX_VALUE+1  
44. 2147483647
45. Long.MIN_VALUE-1  
46. 9223372036854775807
47. 32767  
48. Byte.MIN_VALUE-1
49. -2147483648
50. Short.MIN_VALUE-1
Java Module – Lesson 2A – Practice Exercise (cont.)

Match each data type with the number of memory storage bits required.

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<tbody>
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<td>f</td>
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51. long 52. int 53. short 54. byte 55. char 56. double 57. float

Match each abbreviation with the correct memory designation.

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58. byte 59. gigabyte 60. kilobyte 61. bit 62. exabyte 63. zettabyte 64. megabyte 65. terabyte 66. petabyte 67. yottabyte

Match each given range or description to the correct data type.

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<td>long</td>
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<td>char</td>
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68. -2147483648...2147483647 69. 0...65535 70. -128...127 71. approximately -9 quintillion...9 quintillion 72. -32768...32767 73. up to 15 decimal places of storage and output precision
74. up to 7 decimal places of storage and output precision

Java Module – Lesson 2A – Practice Exercise (cont.)

Match each data value with the most appropriate Java data type.

a. int  
   b. double  
   c. char  
   d. boolean  
   e. String

75. "Hello"
76. 0.28
77. 'A'
78. '9'
79. 3.4
80. 65
81. 100000
82. "true"
83. false
84. "B"