Java Module – Lesson 2A – Practice Exercise **Name**_____

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;
```

```
d = 4.5;
```

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

Matching

Match each value with the correct Java constant.

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

a. 4
b. 8
c. 16
d. 32
e. 64
f. 128
g. 256

____ 51. long
____ 52. int
____ 53. short
____ 54. byte
____ 55. char
____ 56. double
____ 57. float

Match each abbreviation with the correct memory designation.

a. b
b. B
c. KB
d. MB
e. GB
f. TB
g. PB
h. EB
i. ZB
j. YB

____ 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.

a. int
b. float
c. double
d. byte
e. short
f. long
g. char

____ 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"`