Final Quiz No 16

1. The speed of the CPU may be measured in \_\_\_\_\_\_\_\_\_\_.

a. megabytes

b. gigabytes

c. megahertz

d. gigahertz

Key:cd 1 megahertz equals 1 million pulses per second and 1 gigahertz is 1000 megahertz.

2. Which of the following is not permanent storage devices?

a. floppy disk

b. hard disk

c. flash stick

d. CD-ROM

e. main memory

Key:e Disks and CD are used to store data permanently. Data in memory is lost after the power is turned off.

3. \_\_\_\_\_\_\_\_\_\_\_\_\_ is a program that runs on a computer to manage and control a computer's activities.

a. Operating system

b. Java

c. Modem

d. Interpreter

e. Compiler

Key:a

4. \_\_\_\_\_\_\_\_ contains predefined classes and interfaces for developing Java programs.

a. Java language specification

b. Java API

c. Java JDK

d. Java IDE

Key:b

5. The main method header is written as:

a. public static void main(string[] args)

b. public static void Main(String[] args)

c. public static void main(String[] args)

d. public static main(String[] args)

e. public void main(String[] args)

Key:c

6. If you forget to put a closing quotation mark on a string, what kind of error will be raised?

a. a compile error

b. a runtime error

c. a logic error

Key:a This is a syntax error, which will be detected by the compiler.

7. Which of the following assignment statements is incorrect?

a. i = j = k = 1;

b. i = 1; j = 1; k = 1;

c. i = 1 = j = 1 = k = 1;

d. i == j == k == 1;

Key:cd

8. How do you write 2.5 ^ 3.1 in Java?

a. 2.5 \* 3.1

b. Math.pow(2.5, 3.1)

c. Math.pow(3.1, 2.5)

d. 2.5 \*\* 3.1

e. 3.1 \*\* 2.5

Key:b

9. To obtain the current second, use \_\_\_\_\_\_\_\_\_.

a. System.currentTimeMillis() % 3600

b. System.currentTimeMillis() % 60

c. System.currentTimeMillis() / 1000 % 60

d. System.currentTimeMillis() / 1000 / 60 % 60

e. System.currentTimeMillis() / 1000 / 60 / 60 % 24

Key:c

10. What is i printed?

public class Test {

public static void main(String[] args) {

int j = 0;

int i = ++j + j \* 5;

System.out.println("What is i? " + i);

}

}

a. 0

b. 1

c. 5

d. 6

Key:d Operands are evaluated from left to right in Java. The left-hand operand of a binary operator is evaluated before any part of the right-hand operand is evaluated. This rule takes precedence over any other rules that govern expressions. Therefore, ++j is evaluated first, and j is now 1. Then j \* 5 is evaluated, returns 5. So, i is 6.

11. What is y displayed in the following code?

public class Test {

public static void main(String[] args) {

int x = 1;

int y = x++ + x;

System.out.println("y is " + y);

}

}

a. y is 1.

b. y is 2.

c. y is 3.

d. y is 4.

Key:c When evaluating x++ + x, x++ is evaluated first, which does two things: 1. returns 1 since it is post-increment. x becomes 2. Therefore y is 1 + 2.

12. Suppose x = 1, y = -1, and z = 1. What is the output of the following statement? (Please indent the statement correctly first.)

if (x > 0)

if (y > 0)

System.out.println("x > 0 and y > 0");

else if (z > 0)

System.out.println("x < 0 and z > 0");

a. x > 0 and y > 0;

b. x < 0 and z > 0;

c. x < 0 and z < 0;

d. no output.

Key:b You may copy the code to an IDE such as NetBeans or Eclipse and reformat it to see how it is correctly indented. The else clause matches the most recent if clause. So, it actually displays x < 0 and z > 0.

13. Which of the following is a possible output from invoking Math.random()?

a. 3.43

b. 0.5

c. 0.0

d. 1.0

Key:bc Math.random() returns a real value between 0.0 and 1.0, excluding 1.0.

14. Which of the Boolean expressions below is incorrect?

a. (true) && (3 => 4)

b. !(x > 0) && (x > 0)

c. (x > 0) || (x < 0)

d. (x != 0) || (x = 0)

e. (-10 < x < 0)

Key:ade a: (3 => 4) should be (3 >= 4), d: (x = 0) should be (x == 0), and e: should be (-10 < x) && (x < 0)

15. Assume x = 4 and y = 5, which of the following is true?

a. !(x == 4) ^ y != 5

b. x != 4 ^ y == 5

c. x == 5 ^ y == 4

d. x != 5 ^ y != 4

Key:b x != 4 is false and y == 5 is true. So B is correct.

16. What is Math.ceil(3.6)?

a. 3.0

b. 3

c. 4.0

d. 5.0

Key:c Note that ceil returns a double value

17. What is Math.floor(3.6)?

a. 3.0

b. 3

c. 4

d. 5.0

Key:a Note that floor returns a double value

18. To check whether a char variable ch is an uppercase letter, you write \_\_\_\_\_\_\_\_\_\_\_.

a. (ch >= 'A' && ch >= 'Z')

b. (ch >= 'A' && ch <= 'Z')

c. (ch >= 'A' || ch <= 'Z')

d. ('A' <= ch <= 'Z')

Key:b A is wrong because ch >= 'Z'. C is wrong because of using ||. D is wrong because of incorrect syntax. The correct answer is B.

19. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ returns true.

a. "peter".compareToIgnoreCase("Peter")

b. "peter".compareToIgnoreCase("peter")

c. "peter".equalsIgnoreCase("Peter")

d. "peter".equalsIgnoreCase("peter")

e. "peter".equals("peter")

Key:cde The compareToIgnoreCase return an int. So, A and B are wrong. Ignoring case, C, D, and E all return true.

20. The \_\_\_\_\_\_\_\_\_\_ method parses a string s to an int value.

a. integer.parseInt(s);

b. Integer.parseInt(s);

c. integer.parseInteger(s);

d. Integer.parseInteger(s);

Key:b The parseInt method is defined in the Integer class. B is correct.

21. How many times will the following code print "Welcome to Java"?

int count = 0;

while (count++ < 10) {

System.out.println("Welcome to Java");

}

a. 8

b. 9

c. 10

d. 11

e. 0

Key:c The count is initialized to 0 before the loop. (count++ < 10) increments count by 1 and uses the old count value to check if count < 10. So, the loop is executed 10 times for count from 0 to 9. The correct answer is C.

22. What will be displayed when the following code is executed?

int number = 6;

while (number > 0) {

number -= 3;

System.out.print(number + " ");

}

a. 6 3 0

b. 6 3

c. 3 0

d. 3 0 -3

e. 0 -3

Key:c number is 6 before the loop. In the first iteration, number is reduced to 3. In the second iteration, number is reduced to 0. The loop is now finished. The loop body is executed 2 times for number 6 and 3. Since number is reduced by 3 before the print statement. 3 and 0 and displayed. So, the correct answer is C.

23. How many times will the following code print "Welcome to Java"?

int count = 0;

do {

System.out.println("Welcome to Java");

count++;

} while (count < 10);

a. 8

b. 9

c. 10

d. 11

e. 0

Key:c The count is initialized to 0 before the loop. The loop is executed 10 times for count from 0 to 9. When count is 10, the loop continuation condition becomes false. The loop is finished. So, the correct answer is C.

24. Is the following loop correct?

for ( ; ; );

a. Yes

b. No

Key:a Yes. This is equivalent to for (; true; ).

25. What is y after the following for loop statement is executed?

int y = 0;

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

y += 1;

}

A. 9

B. 10

C. 11

D. 12

Key:b Before the loop, y is 0. The loop is executed 10 times. Each time, 1 is added to y. So, after the loop is finished, y is 10. The correct answer is (B).

26. What is the value of balance after the following code is executed?

int balance = 10;

while (balance >= 1) {

if (balance < 9)

break;

balance = balance - 9;

}

A. -1

B. 0

C. 1

D. 2

Key:c Before the loop, balance is 10. The loop-continuation-condition is true (10 >= 1). In the first iteration, balance is reduced to 1. Since 1 >= 1 is true, the loop body is executed. Since balance < 9 is true, the break statement is executed to exit the loop. So, balance is 1 after the loop is finished. The correct answer for this question is C.

27. All Java applications must have a method \_\_\_\_\_\_\_\_\_\_.

a. public static Main(String[] args)

b. public static Main(String args[])

c. public static void main(String[] args)

d. public void main(String[] args)

e. public static main(String[] args)

Key:c Java application's starting method is the main method.

28. Does the return statement in the following method cause compile errors?

public static void main(String[] args) {

int max = 0;

if (max != 0)

System.out.println(max);

else

return;

}

a. Yes

b. No

Key:b It is rare, but sometimes useful to have a return statement for circumventing the normal flow of control in a void method.

29. A variable defined inside a method is referred to as \_\_\_\_\_\_\_\_\_\_.

a. a global variable

b. a method variable

c. a block variable

d. a local variable

key:d

30. Which correctly creates an array of five empty Strings?

a. String[] a = new String [5];

b. String[] a = {"", "", "", "", ""};

c. String[5] a;

d. String[ ] a = new String [5]; for (int i = 0; i &lt; 5; a[i++] = null);

Key:b

31. Which code fragment would correctly identify the number of arguments passed via the command line to a Java application, excluding the name of the class that is being invoked?

a. int count = args.length;

b. int count = args.length - 1;

c. int count = 0; while (args[count] != null) count ++;

d. int count=0; while (!(args[count].equals(""))) count ++;

Key:a

32. Assume int[] scores = {1, 20, 30, 40, 50}, what is the output of System.out.println(java.util.Arrays.toString(scores))?

a. {1, 20, 30, 40, 50}

b. [1, 20, 30, 40, 50]

c. {1 20 30 40 50}

d. [1 20 30 40 50]

Key:b

33. Use the selectionSort method presented in this section to answer this question. What is list1 after executing the following statements?

double[] list1 = {3.1, 3.1, 2.5, 6.4};

selectionSort(list1);

a. list1 is 3.1, 3.1, 2.5, 6.4

b. list1 is 2.5, 3.1, 3.1, 6.4

c. list1 is 6.4, 3.1, 3.1, 2.5

d. list1 is 3.1, 2.5, 3.1, 6.4

Key:b

34. The reverse method is defined in this section. What is list1 after executing the following statements?

int[] list1 = {1, 2, 3, 4, 5, 6};

int[] list2 = reverse(list1);

a. list1 is 1 2 3 4 5 6

b. list1 is 6 5 4 3 2 1

c. list1 is 0 0 0 0 0 0

d. list1 is 6 6 6 6 6 6

key:a

35. Analyze the following code:

public class Test1 {

public static void main(String[] args) {

xMethod(new double[]{3, 3});

xMethod(new double[5]);

xMethod(new double[3]{1, 2, 3});

}

public static void xMethod(double[] a) {

System.out.println(a.length);

}

}

a. The program has a compile error because xMethod(new double[]{3, 3}) is incorrect.

b. The program has a compile error because xMethod(new double[5]) is incorrect.

c. The program has a compile error because xMethod(new double[3]{1, 2, 3}) is incorrect.

d. The program has a runtime error because a is null.

Key:c new double[3]{1, 2, 3} should be replaced by new double[]{1, 2, 3}) (anonymous array).

36. Analyze the following code:

public class Test {

public static void main(String[] args) {

int[] x = {1, 2, 3, 4};

int[] y = x;

x = new int[2];

for (int i = 0; i < x.length; i++)

System.out.print(x[i] + " ");

}

}

a. The program displays 1 2 3 4

b. The program displays 0 0

c. The program displays 0 0 3 4

d. The program displays 0 0 0 0

Key:b

37. Analyze the following code:

public class Test {

public static void main(String[] args) {

double[] x = {2.5, 3, 4};

for (double value: x)

System.out.print(value + " ");

}

}

a. The program displays 2.5, 3, 4

b. The program displays 2.5 3 4

c. The program displays 2.5 3.0 4.0

d. The program displays 2.5, 3.0 4.0

e. The program has a syntax error because value is undefined.

Key:c

38. Which of the following statements are correct?

a. char[][][] charArray = new char[2][2][];

b. char[2][2][] charArray = {'a', 'b'};

c. char[][][] charArray = {{'a', 'b'}, {'c', 'd'}, {'e', 'f'}};

d. char[][][] charArray = {{{'a', 'b'}, {'c', 'd'}, {'e', 'f'}}};

Key:ad

39. Analyze the following code:

public class Test {

public static void main(String[] args) {

boolean[][] x = new boolean[3][];

x[0] = new boolean[1]; x[1] = new boolean[2];

x[2] = new boolean[3];

System.out.println("x[2][2] is " + x[2][2]);

}

}

a. The program has a compile error because new boolean[3][] is wrong.

b. The program has a runtime error because x[2][2] is null.

c. The program runs and displays x[2][2] is null.

d. The program runs and displays x[2][2] is true.

e. The program runs and displays x[2][2] is false.

Key:e x is a ragged array. (See the section on Ragged Array) x[2] has three elements with default value false.

40. Which of the following statements are correct?

a. char[][] charArray = {'a', 'b'};

b. char[2][2] charArray = {{'a', 'b'}, {'c', 'd'}};

c. char[2][] charArray = {{'a', 'b'}, {'c', 'd'}};

d. char[][] charArray = {{'a', 'b'}, {'c', 'd'}};

Key:d

41. Analyze the following code:

class Circle {

private double radius;

public Circle(double radius) {

radius = radius;

}

}

a. The program has a compile error because it does not have a main method.

b. The program will compile, but you cannot create an object of Circle with a specified radius. The object will always have radius 0.

c. The program has a compile error because you cannot assign radius to radius.

d. The program does not compile because Circle does not have a default constructor.

Key:b You have replaced radius = radius by this.radius = radius

42. What is the output for the third statement in the main method?

public class Foo {

static int i = 0;

static int j = 0;

public static void main(String[] args) {

int i = 2;

int k = 3;

{

int j = 3;

System.out.println("i + j is " + i + j);

}

k = i + j;

System.out.println("k is " + k);

System.out.println("j is " + j);

}

}

a. j is 0

b. j is 1

c. j is 2

d. j is 3

Key:a

43. Which of the following statements are true about an immutable object?

a. The contents of an immutable object cannot be modified.

b. All properties of an immutable object must be private.

c. All properties of an immutable object must be of primitive types.

d. A readable object type property in an immutable object must also be immutable.

e. An immutable object contains no mutator methods.

Key:abde

44. Assume java.util.Date[] dates = new java.util.Date[10], which of the following statements are true?

a. dates is null.

b. dates[0] is null.

c. dates = new java.util.Date[5] is fine, which assigns a new array to dates.

d. dates = new Date() is fine, which creates a new Date object and assigns to dates.

Key:bc

45. When invoking a method with an object argument, \_\_\_\_\_\_\_\_\_\_\_ is passed.

a. the contents of the object

b. a copy of the object

c. the reference of the object

d. the object is copied, then the reference of the copied object

Key: c

46. To prevent a class from being instantiated, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. don't use any modifiers on the constructor.

b. use the public modifier on the constructor.

c. use the private modifier on the constructor.

d. use the static modifier on the constructor.

Key:c

47. To declare a constant MAX\_LENGTH as a member of the class, you write

a. final static MAX\_LENGTH = 99.98;

b. final static float MAX\_LENGTH = 99.98;

c. static double MAX\_LENGTH = 99.98;

d. final double MAX\_LENGTH = 99.98;

e. final static double MAX\_LENGTH = 99.98;

Key:e

48. To obtain the distance between the points (40, 50) and (5.5, 4.4), use \_\_\_\_\_\_\_\_\_.

a. distance(40, 50, 5.5, 4.4)

b. new Point2D(40, 50).distance(5.5, 4.4)

c. new Point2D(40, 50).distance(new Point2D(5.5, 4.4))

d. new Point2D(5.5, 4.4).distance(40, 50)

e. new Point2D(5.5, 4.4).distance(new Point2D(40, 50))

Key:bcde

49. Which of the following statements are correct?

a. A reference variable is an object.

b. A reference variable references to an object.

c. A data field in a class must be of a primitive type.

d. A data field in a class can be of an object type.

Key:bd (a) is wrong because a reference variable is not an object, it is a reference that points to an object. (c) is incorrect because a class may have a data field of an object type such as String.

50. The default value for data field of a boolean type, numeric type, object type is \_\_\_\_\_\_\_\_\_\_\_, respectively.

a. true, 1, Null

b. false, 0, null

c. true, 0, null

d. true, 1, null

e. false, 1, null

Key:b

51. The StringBuilder methods \_\_\_\_\_\_\_\_\_\_\_\_\_ not only change the contents of a string builder, but also returns a reference to the string builder.

a. delete

b. append

c. insert

d. reverse

e. replace

Key:abcde

52. What is displayed by the following code?

String[] tokens = "A,B;C;D".split("[,;]");

for (int i = 0; i < tokens.length; i++)

System.out.print(tokens[i] + " ");

a. A,B;C;D

b. A B C D

c. A B C;D

d. A B;C;D

Key:b

53. What is displayed by the following statement?

System.out.println("Java is neat".replaceAll("is", "AAA"));

a. JavaAAAneat

b. JavaAAA neat

c. Java AAA neat

d. Java AAAneat

Key:c

54. \_\_\_\_\_\_\_\_\_\_ returns a string.

a. String.valueOf(123)

b. String.valueOf(12.53)

c. String.valueOf(false)

d. String.valueOf(new char[]{'a', 'b', 'c'})

Key:abcd

55. Assume s is "ABCABC", the method \_\_\_\_\_\_\_\_\_\_ returns a new string "aBCaBC".

a. s.toLowerCase(s)

b. s.toLowerCase()

c. s.replace('A', 'a')

d. s.replace('a', 'A')

e. s.replace("ABCABC", "aBCaBC")

Key:ce

56. Which of the following is the correct statement to return a string from an array a of characters?

a. toString(a)

b. new String(a)

c. convertToString(a)

d. String.toString(a)

Key:b

57. Suppose s1 and s2 are two strings. Which of the following statements or expressions are incorrect?

a. String s = new String("new string");

b. String s3 = s1 + s2

c. s1 &gt;= s2

d. int i = s1.length

e. s1.charAt(0) = '5'

Key:cde

58. Which of the following classes are immutable?

a. Integer

b. Double

c. BigInteger

d. BigDecimal

e. String

Key:abcde

59. Analyze the following code:

public class Test {

public static void main(String[] args) {

new B();

}

}

class A {

int i = 7;

public A() {

setI(20);

System.out.println("i from A is " + i);

}

public void setI(int i) {

this.i = 2 \* i;

}

}

class B extends A {

public B() {

// System.out.println("i from B is " + i);

}

@Override

public void setI(int i) {

this.i = 3 \* i;

}

}

a. The constructor of class A is not called.

b. The constructor of class A is called and it displays "i from A is 7".

c. The constructor of class A is called and it displays "i from A is 40".

d. The constructor of class A is called and it displays "i from A is 60".

Key:d When invoking new B(), B's superclass A's constructor is invoked first. It invokes setI(20). The setI method in B is used because object created is new B(). The setI method in B assigns 3 \* 20 to i. So it displays i from A is 60.

60. What is the output of the following code?

public class Test {

public static void main(String[] args) {

new Person().printPerson();

new Student().printPerson();

}

}

class Student extends Person {

@Override

public String getInfo() {

return "Student";

}

}

class Person {

public String getInfo() {

return "Person";

}

public void printPerson() {

System.out.println(getInfo());

}

}

a. Person Person

b. Person Student

c. Student Student

d. Student Person

Key:b

61. Which of the following are Java keywords?

a. instanceOf

b. instanceof

c. cast

d. casting

Key:b A simple rule: the keywords are all in lowercase.

#

62. Assume Cylinder is a subtype of Circle. Analyze the following code:

Cylinder cy = new Cylinder(1, 1);

Circle c = cy;

a. The code has a compile error.

b. The code has a runtime error.

c. The code is fine.

Key:c You can assign a variable of a subtype to a supertype.

#

63. Assume Cylinder is a subtype of Circle. Analyze the following code:

Circle c = new Circle (5);

Cylinder c = cy;

a. The code has a compile error.

b. The code has a runtime error.

c. The code is fine.

Key:a You cannot assign a variable of a supertype to a subtype without explicit casting.

64. An instance of \_\_\_\_\_\_\_\_\_ describes the errors caused by your program and external circumstances. These errors can be caught and handled by your program.

a. RuntimeException

b. Exception

c. Error

d. Throwable

e. NumberFormatException

Key:b

65. Instances of \_\_\_\_\_\_\_\_\_ are unchecked exceptions.

a. RuntimeException

b. Exception

c. Error

d. Throwable

e. NumberFormatException

Key:ace NumberFormatException is a subclass of RuntimeException

66. What exception type does the following program throw?

public class Test {

public static void main(String[] args) {

int[] list = new int[5];

System.out.println(list[5]);

}

}

a. ArithmeticException

b. ArrayIndexOutOfBoundsException

c. StringIndexOutOfBoundsException

d. ClassCastException

e. No exception

Key:b

67. What exception type does the following program throw?

public class Test {

public static void main(String[] args) {

Object o = new Object();

String d = (String)o;

}

}

a. ArithmeticException

b. ArrayIndexOutOfBoundsException

c. StringIndexOutOfBoundsException

d. ClassCastException

e. No exception

Key:d

68. Which of the following statements are true?

a. You use the keyword throws to declare exceptions in the method heading.

b. A method may declare to throw multiple exceptions.

c. To throw an exception, use the key word throw.

d. If a checked exception occurs in a method, it must be either caught or declared to be thrown from the method.

Key:abcd

69. Polymorphism means \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. that data fields should be declared private

b. that a class can extend another class

c. that a variable of supertype can refer to a subtype object

d. that a class can contain another class

Key:c

#

70. Encapsulation means \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. that data fields should be declared private

b. that a class can extend another class

c. that a variable of supertype can refer to a subtype object

d. that a class can contain another class

Key:a

#

71. Inheritance means \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. that data fields should be declared private

b. that a class can extend another class

c. that a variable of supertype can refer to a subtype object

d. that a class can contain another class

Key:b

#

72. Composition means \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. that data fields should be declared private

a. that data fields should be declared private

b. that a class extends another class

c. that a variable of supertype refers to a subtype object

d. that a class contains a data field that references another object

Key:d

73. Which of the following statements are true?

a. Inheritance models the is-a relationship between two classes.

b. A strong is-a relationship describes a direct inheritance relationship between two classes.

c. A weak is-a relationship describes that a class has certain properties.

d. A strong is-a relationship can be represented using class inheritance.

e. A weak is-a relationship can be represented using interfaces.

Key:abcde

74. Analyze the following code.

public class Test {

public static void main(String[] args) {

java.util.Date x = new java.util.Date();

java.util.Date y = x.clone();

System.out.println(x = y);

}

}

a. A java.util.Date object is not cloneable.

b. x = y in System.out.println(x = y) causes a compile error because you cannot have an assignment statement inside a statement.

c. x = y in System.out.println(x = y) causes a runtime error because you cannot have an assignment statement inside a statement.

d. The program has a compile error because the return type of the clone() method is java.lang.Object.

Key:d (A) is wrong because Date implements and Cloneable and overrides the clone() method. (B) and (C) are wrong because x = y is an assignment expression, which assigns y to x. (D) is correct. You have to cast it into Date in order to assign it to y.

75. Which of the following statements are true?

a. All files are stored in binary format. So, all files are essentially binary files.

b. Text I/O is built upon binary I/O to provide a level of abstraction for character encoding and decoding.

c. Encoding and decoding are automatically performed by text I/O.

d. For binary input, you need to know exactly how data were written in order to read them in correct type and order.

Key:abcd

76. Which of the following statements is true?

a. A static variable is not serialized.

b. A transient variable is not serialized.

c. An object must be an instance of Serializable for it to be serialized.

d. The methods in an object are serialized.

Key:c

77. With which I/O class can you append or update a file?

a. RandomAccessFile()

b. OutputStream()

c. DataOutputStream()

d. None of the above

Key:a

78. Which of the following statements are true?

a. Recursive methods run faster than non-recursive methods.

b. Recursive methods usually take more memory space than non-recursive methods.

c. A recursive method can always be replaced by a non-recursive method.

d. In some cases, however, using recursion enables you to give a natural, straightforward, simple solution to a program that would otherwise be difficult to solve.

key:bcd

79. Analyze the following two programs:

A:

public class Test {

public static void main(String[] args) {

xMethod(5);

}

public static void xMethod(int length) {

if (length > 1) {

System.out.print((length - 1) + " ");

xMethod(length - 1);

}

}

}

B:

public class Test {

public static void main(String[] args) {

xMethod(5);

}

public static void xMethod(int length) {

while (length > 1) {

System.out.print((length - 1) + " ");

xMethod(length - 1);

}

}

}

a. The two programs produce the same output 5 4 3 2 1.

b. The two programs produce the same output 1 2 3 4 5.

c. The two programs produce the same output 4 3 2 1.

d. The two programs produce the same output 1 2 3 4.

e. Program A produces the output 4 3 2 1 and Program B prints 4 3 2 1 1 1 .... 1 infinitely.

Key:e In Program B, xmethod(5) invokes xmethod(4), xmethod(4) invokes xmethod(3), xmethod(3) invokes xmethod(2), xmethod(2) invokes xmethod(1), xmethod(1) returns control to xmethod(2), xmethod(2) invokes xmethod(1) because of the while loop. This continues infinitely.

80. Which of the following statements are true?

a. The Fibonacci series begins with 0 and 1, and each subsequent number is the sum of the preceding two numbers in the series.

b. The Fibonacci series begins with 1 and 1, and each subsequent number is the sum of the preceding two numbers in the series.

c. The Fibonacci series begins with 1 and 2, and each subsequent number is the sum of the preceding two numbers in the series.

d. The Fibonacci series begins with 2 and 3, and each subsequent number is the sum of the preceding two numbers in the series.

key:a