1. Consider the following code segment.

```
/* missing loop header */
{
for (int k = 0; k < 4; k++)
{
  System.out.print(k);
}
System.out.println();
}</pre>
```

The code segment is intended to produce the following output.

0123

0123

0123

Which of the following can be used to replace /\* missing loop header \*/ so that the code segment works as intended?

- 1. for (int j = 0; j < 3; j++)
- 2. for (int j = 1; j < 3; j++)
- 3. for (int j = 1;  $j \le 3$ ; j++)
- (A) I only
- (B) II only
- © III only
- D I and II







**2.** Consider the following code segment.

System.out.print("Hello System.out.println");

System.out.print("!!!");

What is printed as a result of executing the code segment?

- (A) Hello!!!
- (B) Hello System.out.println!!!



- © Hello
- Hello System.out.println
- Nothing is printed because the text "System.out.println" cannot appear inside a print statement.
- 3. Consider the following code segment.

```
int counter = 0;
for (int x = 10; x > 0; x--)
{
  for (int y = x; y <= x; y++)
{
    counter++; // line 6
}
}</pre>
```

How many times will the statement in line 6 be executed as a result of running the code segment?







- (D) 1°
- (E) 20

4. Consider the following code segment.

```
int outerMax = 10;
int innerMax = 5;
for (int outer = 0; outer < outerMax; outer++)
{
  for (int inner = 0; inner <= innerMax; inner++)
{
    System.out.println(outer + inner);
}
}</pre>
```

How many values will be printed when the code segment is executed?

- (A) 45
- (B) 50
- (c) 55
- (D) 60
- (E) 66
- **5.** Consider the following code segment.

```
int x = 3;
int y = -1;
if (x - 2 > y)
{
    x -= y;
}
if (y + 3 >= x)
{
    y += x;
}
System.out.print("x = " + x + " y = " + y);
```

What is printed as a result of the execution of the code segment?

- (A) x = -1 y = -1
- **B** x = 2 y = 1
- (c) x = 3 y = 2
- **D** x = 4 y = -1
- **E** x = 4 y = 3
- **6.** The following code segment is intended to interchange the values of the int variables x and y. Assume that x and y have been properly declared and initialized.

int temp = x;

/\* missing code \*/

Which of the following can be used to replace /\* missing code \*/ so that the code segment works as intended?

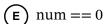
- $\bigcirc y = x;$  x = temp;
- $(E) \begin{array}{l} y = x; \\ temp = x; \end{array}$

7. The following method is intended to print the number of digits in the parameter num.

```
public int numDigits(int num)
{
  int count = 0;
  while (/* missing condition */)
{
  count++;
  num = count / 10;
}
  return count;
}
```

Which of the following can be used to replace /\* missing condition \*/ so that the method will work as intended?

- $\bigcirc$  count != 0
- $\bigcirc$  count > 0
- (c) num >= 0
- $\bigcirc$  num!=0



**8.** The following method is intended to return true if and only if the parameter val is a multiple of 4 but is not a multiple of 100 unless it is also a multiple of 400. The method does not always work correctly.

```
public boolean isLeapYear(int val)
{
  if ((val % 4) == 0)
  {
   return true;
  }
  else
  {
  return (val % 400) == 0;
  }
}
```

Which of the following method calls will return an incorrect response?

- (A) isLeapYear(1900)
- B) isLeapYear(1984)
- c isLeapYear(2000)
- (D) isLeapYear(2001)
- (E) isLeapYear(2010)

**9.** Consider the following code segment, which is intended to print the sum of all the odd integers from 0 up to and including 101.

```
int r = 0;
int sum = 0;
/* missing loop header */
{
  if (r % 2 == 1)
{
    sum += r;
}
r++;
}
```

System.out.println(sum);

Which of the following could replace /\* missing loop header \*/ to ensure that the code segment will work as intended?

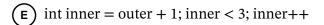
- (A) while  $(r \le 100)$
- $\bigcirc$  while (sum <= 100)
- (c) while (r < 101)
- $\bigcirc$  while (r <= 101)
- (E) while (sum <= 101)

**10.** Consider the following code segment.

```
for (int outer = 0; outer < 3; outer++)
{
for (/* missing loop header */)
{
   System.out.print(outer + "" + inner + "_");
}
}</pre>
```

Which of the following can be used as a replacement for /\* missing loop header \*/ so that the code segment produces the output  $00_01_02_11_12_22_?$ 

- $\bigcirc$  int inner = 0; inner < 3; inner++
- (B) int inner = 1; inner < 3; inner++
- (c) int inner = outer 1; inner < 3; inner++
- **D** int inner = outer; inner < 3; inner++





**11.** Consider the following code segment.

```
int count = 0;
for (int x = 1; x <= 3; x++)
{
   /* missing loop header */
{
   count++;
}
}</pre>
```

System.out.println(count);

Which of the following should be used to replace /\* missing loop header \*/ so that the code segment will print 6 as the value of count?

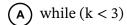
- (A) for (int y = 0;  $y \le 2$ ; y++)
- (B) for (int y = 0; y < 3; y++)
- (c) for (int y = 2; y >= 0; y--)
- (D) for (int y = 3; y > 0; y--)
- (E) for (int y = 0; y < x; y++)



12. Consider the following code segment.

```
int k = 0;
/* missing loop header */
{
k++;
System.out.print(k + " ");
}
```

Which of the following can be used as a replacement for /\* missing loop header \*/ so that the code segment prints out the string "1 2 3 4 "?





- (c) while (k < 5)
- $(\mathbf{D})$  while  $(\mathbf{k} \le 4)$
- $\bigcirc$  while (k <= 5)

# **13.** Consider the following code segment.

```
if (false && true || false)
{
  if (false || true && false)
{
    System.out.print("First");
}
  else
{
    System.out.print("Second");
}
}
if (true || true && false)
{
    System.out.print("Third");
}
```

What is printed as a result of executing the code segment?





(B) Second





(D) FirstThird

(E) SecondThird

14. Consider the following code segment.

```
int start = 4;
int end = 5;
boolean keepGoing = true;
if (start < end && keepGoing)
if (end > 0)
start += 2;
end++;
}
else
end += 3;
}
if (start < end)
if (end == 0)
end += 2;
start++;
}
else
end += 4;
```

What is the value of end after the code segment is executed?



5





9

(D) 10

**E**) 16

15. Consider the following code segment.

```
int x = 7;
int y = 4;
boolean a = false;
boolean b = false;
if (x > y)
if (x \% y >= 3)
a = true;
x -= y;
}
else
x += y;
}
if (x < y)
if (y \% x >= 3)
b = true;
x -= y;
}
else
x += y;
```

What are the values of a, b, and x after the code segment has been executed?

- (A) a = true, b = true, x = -1
- (B) a = true, b = false, x = 3
- $\bigcirc$  a = true, b = false, x = 7
  - $(\mathbf{D})$  a = false, b = true, x = 3
  - (E) a = false, b = false, x = 11
  - 16. A student has created a Car class. The class contains variables to represent the following.
    - A String variable called color to represent the color of the car
    - An int variable called year to represent the year the car was made
    - A String variable called make to represent the manufacturer of the car
    - A String variable called model to represent the model of the car

The object vehicle will be declared as type Car.

Which of the following descriptions is accurate?

- (A) An instance of the vehicle class is Car.
- (B) An instance of the Car object is vehicle.
- (c) An attribute of the year object is int.
- (D) An attribute of the vehicle object is color.



17. Consider the following code segment.

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num += num; num \*= num;

Assume that num has been previously declared and initialized to contain an integer value. Which of the following best describes the behavior of the code segment?

- (A) The value of num is two times its original value.
- (B) The value of num is the square its original value.
- C The value of num is two times the square of its original value.
- D The value of num is the square of twice its original value.



- (E) It cannot be determined without knowing the initial value of num.
- **18.** Consider the code segment below.

```
int a = 1988;
int b = 1990;
```

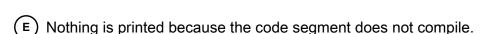
String claim = " that the world's athletes " +

"competed in Olympic Games in ";

System.out.println(s);

What, if anything, is printed when the code segment is executed?

- (A) It is trueclaima but falseclaimb.
- (B) It is trueclaim1998 but falseclaim1990.
- E It is true that the world's athletes competed in Olympic Games in a but false that the world's athletes competed in Olympic Games in b.
- D It is true that the world's athletes competed in Olympic Games in 1988 but false that the world's athletes competed in Olympic Games in 1990.



**19.** Consider the following code segment, which is intended to print the digits of the two-digit int number num in reverse order. For example, if num has the value 75, the code segment should print 57. Assume that num has been properly declared and initialized.

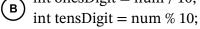
/\* missing code \*/

System.out.print(onesDigit);

System.out.print(tensDigit);

Which of the following can be used to replace /\* missing code \*/ so that the code segment works as intended?

- int onesDigit = num % 10; int tensDigit = num / 10;
- $\sim$  int onesDigit = num / 10;



- int onesDigit = 10 / num; int tensDigit = 10 % num;
- int onesDigit = num % 100; int tensDigit = num / 100;
- int onesDigit = num / 100; int tensDigit = num % 100;



- 20. Which of the following expressions evaluate to 7?
  - 1.9 + 10% 12
  - 2.(9+10)%12
  - 3.9 2%12
- (A) I only
- (B) II only
- (c) I and III
- D II and III



- (E) I, II, and III
- **21.** A student has created an OrderedPair class to represent points on an xy-plane. The class contains the following.
  - An int variable called x to represent an *x*-coordinate.
  - An int variable called y to represent a *y*-coordinate.
  - A method called printXY that will print the values of x and y.

The object origin will be declared as type OrderedPair.

Which of the following descriptions is accurate?

- (A) origin is an instance of the printXY method.
- (B) origin is an instance of the OrderedPair class.



- (c) origin is an instance of two int objects.
- (D) OrderedPair is an instance of the origin object.
- (E) printXY is an instance of the OrderedPair class.
- 22. Consider the following code segment.

int x = 5;

x += 6 \* 2;

x = 3 / 2;

What value is stored in x after the code segment executes?

- (A) -1.5
- **B** 1
- (c) 9
- (D) 15.5
- **E** 16





23.	Consider the following	code segment,	where k and	count are	properly	declared	and
	initialized int variables.						

k++;

k++;

count++;

k--;

count++;

k--;

Which of the following best describes the behavior of the code segment?

- (A) The code segment leaves both k and count unchanged.
- (B) The code segment increases both k and count by 2.
- C The code segment increases k by 4 and count by 2.
- (D) The code segment leaves k unchanged and increases count by 2.



(E) The code segment increases k by 2 and leaves count unchanged.

**24.** Consider the following Point2D class.

```
public class Point2D
{
  private double xCoord;
  private double yCoord;

public Point2D(double x, double y)
  {
  xCoord = x;
  yCoord = y;
  }
}
```

Which of the following code segments, appearing in a class other than Point2D, will correctly create an instance of a Point2D object?

- (a) Point2D p = (3.0, 4.0);
- (B) Point2D p = Point2D(3.0, 4.0);
- (c) new p = Point2D(3.0, 4.0);
- $\bigcirc$  new Point2D = p(3.0, 4.0);
- $\bigcirc$  Point2D p = new Point2D(3.0, 4.0);



```
int a = 10;
int b = 5 * 2;
System.out.print(a == b);
```

What is printed as a result of executing the code segment?

- (A) 5
- (B) 10
- (c) 10 == 10
- (D) true
- (E) false
- **26.** Consider the following code segment.

int a = 4;

int b = 5;

a++;

b++;

int c = a + b;

a = 1;

System.out.println(a + c);

What is printed when the code segment is executed?

- (A) 9
- **B** 10
- **(c)** 14
- (D) 15
- **E**) 25



27. Consider the following code segment.

```
System.out.print("AP");
System.out.println();
System.out.println("CS");
System.out.print("A");
```

What is printed as a result of executing the code segment?

- (A) APCSA
- $\bigcirc$  APCS  $_{\Delta}$
- © AP CSA



AP



28. Consider the following code segment.

```
int num = 1;
while (num < 5)
{
System.out.println("A");
num += 2;
}</pre>
```

What is printed as a result of executing the code segment?







- C AAA
- (D) AAAA
- (E) AAAAA
- 29. Consider the following code segment.

System.out.print(I do not fear computers.); // Line 1

System.out.println(I fear the lack of them.); // Line 2

System.out.println(--Isaac Asimov); // Line 3

The code segment is intended to produce the following output but may not work as intended.

I do not fear computers. I fear the lack of them.

--Isaac Asimov

Which change, if any, can be made so that the code segment produces the intended output?

- (A) In line 1, print should be changed to println.
- (B) In lines 2 and 3, println should be changed to print.
- (c) The statement System.out.println() should be inserted between lines 2 and 3.
- In lines 1, 2, and 3, the text that appears in parentheses should be enclosed in quotation marks.



(E) No change is needed; the code segment works correctly as is.

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# **Practice Quiz 3**

30. Consider the following code segment.

System.out.print(\*); // Line 1 System.out.print("\*"); // Line 2 System.out.println(); // Line 3 System.out.println("\*"); // Line 4

The code segment is intended to produce the following output, but may not work as intended.

\*\*

\*

Which line of code, if any, causes an error?



- D Line 4
- E The code segment works as intended.