

Note: Correct responses are based on Java, J2sdk v 6.0, from Sun Microsystems, Inc. All provided code segments are intended to be syntactically correct, unless otherwise stated (i. e. `error` is an answer choice) and any necessary Java 2 Standard Packages have been imported. Ignore any typographical errors and assume any undefined variables are defined as used.

QUESTION 1	
What is 16_9 plus 23_4 ?	
A. 34_8 B. 32_8 C. $1B_{16}$ D. 37_8 E. 121_4	
QUESTION 2	
What is output by the code to the right?	<code>byte fun = 'b'; out.println(fun);</code>
A. 0 B. 65 C. 97 D. A E. 98	
QUESTION 3	
What is output by the code to the right?	<code>double c = 2; c *= 5 + 3; out.println(c);</code>
A. 16 B. 13.0 C. 11.0 D. 16.0 E. 13	
QUESTION 4	
What is output by the code to the right?	<code>double d = Math.max(8.1, 5.6); d = Math.round(d); out.println(d);</code>
A. 8.0 B. 6.0 C. 8 D. 6 E. 5	
QUESTION 5	
What is output by the code to the right?	<code>int e = (((11+5)/5) - (3*-2)); out.println(e);</code>
A. -1 B. 3 C. -6 D. 8 E. 9	
QUESTION 6	
What is output by the code to the right?	<code>String f = "myvalentinesdaymummyman"; out.println(f.indexOf("m"));</code>
A. -1 B. 15 C. 9 D. 0 E. 17	
QUESTION 7	
What is output by the code to the right?	<code>String g = "yoooy"; String h = "goooy"; out.println(g.length()==h.length());</code>
A. 0 B. 1 C. true D. false E. -1	
QUESTION 8	
What is output by the code to the right?	<code>int i = 7; i = i % 11; out.println(i);</code>
A. 4 B. 11 C. 0 D. 7 E. -4	
QUESTION 9	
What is output by the code to the right?	<code>int j = 19; do j -= 4; while(j>1); out.println(j);</code>
A. 3 B. 7 C. 1 D. -1 E. 0	
QUESTION 10	
What is output by the code to the right?	<code>int[] k = new int[5]; int[] m = k; k[2] = 6; m[2] = 7; out.println(k[2] + m[2]);</code>
A. 6 B. 7 C. 12 D. 13 E. 14	
QUESTION 11	
What is the <i>last</i> value output by the code to the right ?	<code>for(double p=0; p < 17.00; p+=2.5) out.println(p);</code>
A. 5.0 B. 7.5 C. 10.0 D. 12.5 E. 15.0	

<p>QUESTION 12</p> <p>What is output by the code to the right?</p> <p>A. 8.173 B. 8.2 C. 8.17 D. 8.174 E. 8.175</p>	<pre>double n = 8.1753f; String o = String.format("%.3f",n); out.println(o);</pre>
<p>QUESTION 13</p> <p>What is output by the code to the right?</p> <p>A. 7 B. 10 C. 12 D. 14 E. There is no output due to syntax error.</p>	<pre>int i = 5; i += (i+=2); System.out.println(i);</pre>
<p>QUESTION 14</p> <p>Which of following could correctly replace <*1> in the code to the right ?</p> <p>A. TreeSet B. HashSet C. Set D. A and B only E. A, B, and C</p>	<pre>Set<Double> setTest; setTest = new <*1> <Double>();</pre>
<p>QUESTION 15</p> <p>What is output by the code to the right?</p> <p>A. 0 B. 1 C. false D. true E. n</p>	<pre>boolean s=true; boolean t=false; out.println(!(s&t) s (t s));</pre>
<p>QUESTION 16</p> <p>What replaces <*1> in the code to the right so method doEet will return true only when parameter x is equal to the remainder of x divided by parameter y?</p> <p>A. return x / y == x; B. return x / y == y; C. return x % y == x; D. return y % y == x; E. more than one of these</p>	<pre>public boolean doEet(double x, int y) { <*1> }</pre>
<p>QUESTION 17</p> <p>What is output by the code to the right?</p> <p>A. 24 B. 25 C. 17 D. 35 E. There is no output due to a syntax error.</p>	<pre>Integer[] u = {3,4,5,6,7,10}; int theSum = 0; for(int v : u) theSum += v; out.println(theSum);</pre>

QUESTION 18

What correctly replaces **<*1>** in the code to the right so all elements of `chop` are totalled?

- A. `chop.nextInt()`
- B. `chop.next()`
- C. `chop.hasNext()`
- D. `chop.hasNextInt()`
- E. `chop`

```
String toChop = "1+2*3+4/5";
Scanner chop = new Scanner(toChop);
chop.useDelimiter("[+/*]");
Integer tot = 0;
while( <*1> )
{
    tot += chop.nextInt();
}
out.println( tot );
```

QUESTION 19

Assume **<*1>** was replaced correctly. What is output by the code to the right?

- A. 12345
- B. 15
- C. 6
- D. 1+2+/*3+4/5
- E. 10

QUESTION 20

Which of the following is a subinterface of `SortedMap`?

- A. `TreeMap`
- B. `TreeSet`
- C. `HashMap`
- D. `Map`
- E. `Set`

QUESTION 21

Which of the following is **not** a descendant of `List`?

- A. `Stack`
- B. `ArrayList`
- C. `Queue`
- D. `LinkedList`
- E. `Vector`

QUESTION 22

What is output by the code to the right?

- A. 93
- B. 12
- C. 75
- D. 723
- E. There is no output due to syntax error.

```
System.out.println(7 + 2 + "3");
```

QUESTION 23

What is returned by the call `dude(3)` ?

- A. -27
- B. -35.0
- C. -22.0
- D. -27.0
- E. There is no output due to runtime error.

```
public static double dude(int whoa)
{
    if(whoa > -7)
        return dude(whoa - 3) +
            dude(whoa - 2) + whoa;
    else
        return 2;
}
```

QUESTION 24

What is returned by the call `dude(-6)` ?

- A. 2.0
- B. 1.0
- C. -1.0
- D. -2.0
- E. There is no output due to runtime error.

<p>QUESTION 25</p> <p>What is the output of // line 1?</p> <p>A. [1,1,1] B. [0,0,0] C. [2,4,6] D. [1,2,3] E. [3,3,3]</p>	<pre>public static void fun(int[][] mat){ for(int r=0; r<mat.length; r++) for(int c=0; c<mat.length; c++) mat[c][r] = c * r + c; }</pre> <p>////////////////////////////////////</p>
<p>QUESTION 26</p> <p>What is the output of // line 2?</p> <p>A. [1,1,1] B. [0,0,0] C. [2,4,6] D. [1,2,3] E. [3,3,3]</p>	<pre>//client code int[][] m = {{1,1,1},{1,1,1},{1,1,1}}; fun(m); String s = Arrays.toString(m[0]); out.println(s); //line 1 s = Arrays.toString(m[2]); out.println(s); //line 2</pre>
<p>QUESTION 27</p> <p>What is output by the code to the right?</p> <p>A. 36 B. 43 C. 45 D. 47 E. 49</p>	<pre>int n = 6; int[] dp = new int[n+1]; dp[n]=1; for(int i = n-1; i >= 0; i--){ int ans = 0; ans += dp[i+1]; if(i != n-1){ ans += 2 * dp[i+2]; } dp[i] = ans; } System.out.println(dp[0]);</pre>
<p>QUESTION 28</p> <p>What is output by the call x("abascus", "bakcps")?</p> <p>A. 2 B. 4 C. 6 D. 8 E. 0</p>	<pre>public static void x(String a, String b) { int n = a.length(); int m = b.length(); int best = 0; for(int d = -n+1; d<n; d++){ int curr = 0; for(int i=0; i<m; i++){ char ca = (i+d >= n i+d < 0) ? '?' : a.charAt(i+d); char cb = b.charAt(i); if(ca == cb) curr++; } best = Math.max(best, curr); } System.out.println(best); }</pre>
<p>QUESTION 29</p> <p>What is output by the call x("bumpy", "alligator")?</p> <p>A. 2 B. 4 C. 6 D. 8 E. 0</p>	
<p>QUESTION 30</p> <p>Assuming a binary search tree has 5 leaves, what is the minimum number of levels that it could have?</p> <p>A. 0 B. 1 C. 2 D. 3 E. 4</p>	

QUESTION 31

Which of the following methods is called when adding a new pair to a Map?

- A. add()
- B. set()
- C. insert()
- D. put()
- E. more than one of these

QUESTION 32

What replaces **<*1>** in the code to the right to correctly complete method `what`?

- A. `chop.next();`
- B. `chop.nextInt();`
- C. `chop.nextDouble();`
- D. A and B only
- E. A,B, and C

```
public class Bloop
{
    private int[] stuff;

    public Bloop(String s)
    {
        Scanner chop = new Scanner(s);
        stuff = new int[chop.nextInt()];
        <*1>
        for(int i=0; i<stuff.length;i++)
            stuff[i]=chop.nextInt();
    }

    public boolean isBloop(int num)
    {
        for(int i=0;i<stuff.length;i++){
            if(num>=stuff[i])
                return false;
        }
        return true;
    }
}
```

QUESTION 33

What is method `isBloop` trying to determine about `num`?

- A. is `num` is a binary number
- B. if `num` is smaller than all numbers in `stuff`
- C. if `num` is larger than all numbers in `stuff`
- D. if `num` is not present in `stuff`
- E. if `num` is present in `stuff`

QUESTION 34

Assume **<*1>** was filled correctly. What is the output of `//line 1`?

- A. 0
- B. 1
- C. true
- D. false
- E. There is no output due to syntax error.

```
////////////////////////////////////
//client code
Bloop runner = new Bloop("5 - 1 3 4 5 6");
out.println(runner.isBloop(3));    //line 1
out.println(runner.isBloop(0));    //line 2
```

QUESTION 35

Assume **<*1>** was filled correctly. What is the output of `//line 2`?

- A. 0
- B. 1
- C. true
- D. false
- E. There is no output due to syntax error.

QUESTION 36

What is the output if **<*1>** is replaced with `tomek.talk();` in the client code at right?

- A. Hello World
- B. Tricky
- C. Funny
- D. You N00b
- E. There is no output due to syntax error.

```
class Coder{
    public void talk(){
        System.out.print("Hello World");
    }
}
```

QUESTION 37

What is the output if **<*1>** is replaced with `wu.talk2();` in the client code at right?

- A. Hello World
- B. Tricky
- C. Funny
- D. You N00b
- E. There is no output due to syntax error.

```
class TopCoder extends Coder{
    public void talk2(){
        System.out.print("Tricky");
    }
}
```

QUESTION 38

What is the output if **<*1>** is replaced with `coder.talk();` in the client code at right?

- A. Hello World
- B. Tricky
- C. Funny
- D. You N00b
- E. There is no output due to syntax error.

```
class Neal extends Coder{
    public void talk(){
        System.out.print("Funny");
    }

    public void talk2(){
        System.out.print("You N00b");
    }
}
```

```
////////////////////////////////////
//client code
Neal wu = new Neal();
Coder tomek = new TopCoder();
Coder coder = (Coder)wu;
<*1>
```

QUESTION 39

What is the output if **<*1>** is replaced with `coder.talk2();` in the client code at right?

- A. Hello World
- B. Tricky
- B. Funny
- C. You N00b
- E. There is no output due to a syntax error.

QUESTION 40

What is output by the code to the right?

- A. 4
- B. 2
- C. 3
- D. 30
- E. 5

```
String u = "5 3 1 2 4 7 10 11 30 25 9";
String[] x = u.split("\\s+");

TreeSet<String> s;
s = new TreeSet<String>();

for(String item : x)
    s.add(item);

System.out.println(s.higher("3"))
```