

Note: Correct responses are based on Java, J2sdk v 5.0, 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	
<p>$24_8 - 17_8 = ?$</p> <p>A. 101_2 B. 9_{10} C. 19_6 D. A_{16} E. 1010_2</p>	
QUESTION 2	
<p>What is output by the code to the right?</p> <p>A. 0 B. 65 C. 97 D. A E. error</p>	<pre>byte fun = 'A'; out.println(fun);</pre>
QUESTION 3	
<p>What is output by the code to the right?</p> <p>A. 16 B. 13.0 C. 11.0 D. 16.0 E. 13</p>	<pre>double c = 2; c *= 5 + 3; out.println(c);</pre>
QUESTION 4	
<p>What is output by the code to the right?</p> <p>A. 8.0 B. 6.0 C. 8 D. 6 E. 5</p>	<pre>double d = Math.max(8.3,5.8); d = Math.round(d); out.println(d);</pre>
QUESTION 5	
<p>What is output by the code to the right?</p> <p>A. -1 B. 3 C. -6 D. 8 E. 9</p>	<pre>int e = (((11+5)/5) - (3*-2)); out.println(e);</pre>
QUESTION 6	
<p>What is output by the code to the right?</p> <p>A. -1 B. 4 C. 7 D. 3 E. 6</p>	<pre>String f = "valentinesday"; out.println(f.indexOf("m"));</pre>
QUESTION 7	
<p>What is output by the code to the right?</p> <p>A. 0 B. 1 C. true D. false E. -1</p>	<pre>String g = "yo"; String h = "go"; out.println(g.length()==h.length());</pre>
QUESTION 8	
<p>What is output by the code to the right?</p> <p>A. 20 B. 11 C. 0 D. 9 E. -5</p>	<pre>int i = 9; i = i%20; out.println(i);</pre>
QUESTION 9	
<p>What is output by the code to the right?</p> <p>A. 3 B. 7 C. 1 D. -1 E. 0</p>	<pre>int j = 19; do j -= 4; while(j>1); out.println(j);</pre>
QUESTION 10	
<p>What is output by the code to the right?</p> <p>A. 6 B. 0 C. 12 D. 5 E. 18</p>	<pre>int[] k = new int[5]; int[] m = new int[5]; System.arraycopy(m,0,k,0,k.length); k[2] = 6; out.println(k[2] + m[2]);</pre>
QUESTION 11	
<p>What is the <i>last</i> value output by the code to the right ?</p> <p>A. 5.0 B. 7.5 C. 10.0 D. 12.5 E. 15.0</p>	<pre>for(double p=0; p<12.95; p+=2.5) out.println(p);</pre>

<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. 8.1</p>	<pre>double n = 8.1735f; 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. 12 B. 20 C. 17 D. 19 E. 23</p>	<pre>int q = 17; int r = 23; out.println(q & r ^ 9 & q >> 3);</pre>
<p>QUESTION 14</p> <p>What correctly replaces <code><*1></code> 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 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 <code><*1></code> in the code to the right so method <code>doEet</code> will return <code>true</code> only when parameter <code>x</code> is equal to the remainder of <code>x</code> divided by parameter <code>y</code>?</p> <p>A. <code>return x / y == x;</code> B. <code>return x / y == y;</code> C. <code>return x % y == x;</code> D. <code>return y % y == x;</code> 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. 18 E. error</p>	<pre>Integer[] u = {3,4,5,6,7}; int theSum = 0; for(int v : u) theSum += v; out.println(theSum);</pre>
<p>QUESTION 18</p> <p>What correctly replaces <code><*1></code> in the code to the right so all elements of <code>chop</code> are inspected?</p> <p>A. <code>chop.nextInt()</code> B. <code>chop.next()</code> C. <code>chop.hasNext()</code> D. <code>chop.hasNextInt()</code> E. <code>chop</code></p>	<pre>String toChop = "1+2+/*3+4/5"; Scanner chop = new Scanner(toChop); chop.useDelimiter("[+/*]"); String output = ""; while(<*1>) { output = output + chop.next(); } out.println(output);</pre>
<p>QUESTION 19</p> <p>Assume <code><*1></code> was replaced correctly. What is output by the code to the right?</p> <p>A. 12345 B. 15 C. 345 D. 1+2+/*3+4/5 E. 1+23+4/5</p>	
<p>QUESTION 20</p> <p>Which of the following is a subinterface of <code>Map</code>?</p> <p>A. <code>TreeTable</code> B. <code>TreeSet</code> C. <code>BinaryMap</code> D. <code>SortedMap</code> E. <code>HashSet</code></p>	

<p>QUESTION 21</p> <p>Which of the following is <i>not</i> a descendant of List?</p> <p>A. Stack B. ArrayList C. Queue D. LinkedList E. Vector</p>	
<p>QUESTION 22</p> <p>What is output by the code to the right?</p> <p>A. -1 B. 1 C. 0</p> <p>D. what E. error</p>	<pre>StringBuffer x; x = new StringBuffer("what"); StringBuffer y; y = new StringBuffer("up"); out.println(x.compareTo(y));</pre>
<p>QUESTION 23</p> <p>What is returned by the call dude(3) ?</p> <p>A. -27 B. -35.0</p> <p>C. -22.0 D. -27.0</p> <p>E. runtime error</p>	<pre>public static double dude(int whoa) { if(whoa > -7) return dude(whoa - 3) + dude(whoa - 2) + whoa; else return 2; }</pre>
<p>QUESTION 24</p> <p>What is returned by the call dude(-6) ?</p> <p>A. 2.0 B. 1.0</p> <p>C. -1.0 D. -2.0</p> <p>E. runtime error</p>	
<p>QUESTION 25</p> <p>What is the output of // line 1?</p> <p>A. [1,1,1] B. [0,0,0]</p> <p>C. [2,4,6] D. [1,2,3]</p> <p>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; } //test 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 26</p> <p>What is the output of // line 2?</p> <p>A. [1,1,1] B. [0,0,0]</p> <p>C. [2,4,6] D. [1,2,3]</p> <p>E. [3,3,3]</p>	
<p>QUESTION 27</p> <p>Which of the following could fill <*1>?</p> <p>A. new QBack(); B. new RunningBack();</p> <p>C. new Back(); D. A and B only</p> <p>E. A, B, and C</p>	<pre>public class Back{ //code not shown } public class RunningBack extends Back{ //code not shown } public class QBack extends RunningBack{ //code not shown }</pre>
<p>QUESTION 28</p> <p>Which of the following could fill <*2>?</p> <p>A. new QBack(); B. new RunningBack();</p> <p>C. new Back(); D. A and B only</p> <p>E. A, B, and C</p>	
<p>QUESTION 29</p> <p>Which of the following could fill <*3>?</p> <p>A. new QBack(); B. new RunningBack();</p> <p>C. new Back(); D. A and B only</p> <p>E. A, B, and C</p>	<pre>//test code RunningBack rBack = <*1> Back genBack = <*2> QBack qBack = <*3></pre>

QUESTION 30

Assuming a binary search tree has 5 leaves, what is the minimum number of levels that it could have?

- A. 0 B. 1 C. 2 D. 3 E. 4

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

```
class What
{
    private int[] stuff;

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

QUESTION 33

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

- A. `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. syntax error

```
//test code in the main of another class

What runner = new What("5 - 1 3 4 5 6");
out.println(runner.isWhat(7)); //line 1
out.println(runner.isWhat(6)); //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. syntax error

QUESTION 36

What replaces `<*1>` in the code to the right so the constructor in `Bling` would be complete?

- A. `super();`
- B. `super(costPerLink, size);`
- C. `super(cost);`
- D. `super(cost, 0.0);`
- E. more than one of these

QUESTION 37

What replaces `<*2>` in the code to the right so the `Bling` `getValue()` method would be complete?

- A. `super.getValue(cost);`
- B. `getValue();`
- C. `super.getValue();`
- D. A and B
- E. A, B, and C

QUESTION 38

What replaces `<*3>` in the code to the right so that the `Bling` `toString()` method would be complete?

- A. `toString()`
- B. `super.toString()`
- C. `chain + " " + costPerLink + " "`
- D. A and B
- E. A, B, and C

QUESTION 39

What replaces `<*4>` in the code to right so that reference `shiny` would refer to a `Bling`?

- A. `new Bling('A', 2);`
- B. `new Bling(5.3, 7);`
- C. `new Bling(9.9, 1.1);`
- D. `new Bling(Math.PI, 22);`
- E. more than one of these

QUESTION 40

Assume all blanks have been filled correctly. After executing the test code, which of the following could have been output by `//line 1`?

- A. 0
- B. 234324.11
- C. false
- D. bling
- E. 400

```
class Link
{
    //code not shown
}

class Chain
{
    private ArrayList<Link> chain;
    private double costPerLink;

    public Chain(double cost)
    {
        //code not shown
    }

    public Chain(double cost, int length)
    {
        //code not shown
    }

    public double getValue()
    {
        //code not shown
    }

    public String toString()
    {
        //code not shown
    }
}

class Bling extends Chain
{
    private double blingPriceUp;
    public Bling(double cost, double bling)
    {
        <*1>
        blingPriceUp=bling;
    }
    public double getValue()
    {
        return blingPriceUp * <*2>
    }
    public String toString()
    {
        return <*3> + " " +blingPriceUp;
    }
}

//test code in the main of another class
Bling shiny = <*4>
out.println(shiny.getValue()); //line 1
```