

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**

$17_8 * 12_8 = ?$

- A.  $150_8$       B.  $224_8$       C.  $204_8$       D.  $306_8$       E.  $226_8$

**QUESTION 2**

What is output by the code to the right?

- A. 0      B. 11      C. 1      D. 2      E. 12

```
String s = "Ghosts and Goblins";
out.println(s.indexOf('G'));
```

**QUESTION 3**

What is output by the code to the right?

- A. C      B. S  
C. I      D. CI  
E. CS

```
int x = 2;
switch(x%5) {
    case 0 : out.print("C");
    case 1 : out.print("S"); break;
    case 2 : out.print("I");
}
```

**QUESTION 4**

What is output by the code to the right?

- A. 56      B. 48      C. 0      D. 51      E. 8

```
int x = '0' + 3;
out.println(x);
```

**QUESTION 5**

What is output by the code to the right?

- A. xnxtwothree      B. xnxtwxthrxx      C. two  
D. onxtwothrxx      E. error

```
String s = "onetwothree";
s = s.replaceAll("[oe]" , "x");
out.println(s);
```

**QUESTION 6**

What is output by the code to the right?

- A. 4      B. 8      C. 4.0      D. 8.0      E. syntax error

```
out.println(Math.pow(2,2));
```

**QUESTION 7**

What of the following statements would correctly fill `<*1>` ?

- A. `new ArrayList<Byte>()`      B. `new TreeMap()`  
C. `new HashSet<Short>()`      D. `new Set()`  
E. `new TreeSet<Integer>()`

```
Collection<Byte> x = <*1>;
```

**QUESTION 8**

Which of the following data types could be assigned the value `0.0` ?

- A. `char`      B. `int`      C. `float`      D. `double`      E. all of these

**QUESTION 9**

Which of the following methods is used to get a value from a map ?

- A. `add()`      B. `getValue()`      C. `put()`      D. `set()`      E. `get()`

**QUESTION 10**

Which of the following is not an Object?

- A. `Character`      B. `boolean`      C. `Byte`      D. `Integer`      E. `Double`

<b>QUESTION 11</b>  What is output by the code to the right? A. true                      B. false                      C. null D. one&&two                E. true&&false	<pre>boolean one = true; boolean two = false; out.println(!two&amp;&amp;(!two  !one));</pre>
<b>QUESTION 12</b>  What is output by the code to the right? A. 56            B. 48            C. 0            D. 51            E. 8	<pre>char x = (char) ((7&lt;&lt;3)-8); out.println(x);</pre>
<b>QUESTION 13</b>  What is output by the code to the right? A. muddy                      B. muddywater                      C. water D. null                      E. error	<pre>String s = "water"; String t = s; t = "muddy"; out.println(s);</pre>
<b>QUESTION 14</b>  What is output by the code to the right? A. null            B. 3            C. 2            D. 1            E. 0	<pre>Integer[][] mat = new Integer[4][4]; for( int r=0; r&lt;mat.length/2; r++ )     Arrays.fill(mat[r], 2); out.println(mat[3][3]);</pre>
<b>QUESTION 15</b>  What is output by line 1 in the code to the right? A. [1, 5]                      B. [5, 1]                      C. [1, 1] D. [5, 5]                      E. [1]	<pre>Queue&lt;Integer&gt; q; q = new LinkedList&lt;Integer&gt;(); q.add(5); q.add(1); out.println(q);                      //line 1 q.add(7); q.remove(); q.add(11); q.remove(); out.println(q);                      //line 2</pre>
<b>QUESTION 16</b>  What is output by line 2 in the code to the right? A. [1, 5, 11, 7]                      B. [5, 1, 11] C. [7, 1]                      D. [7, 5]                      E. [7, 11]	
<b>QUESTION 17</b>  What is output by the code to the right? A. one                      B. two C. null                      D. hello E. world	<pre>String[] s = {"one","two","three"}; for( String e : s ) {     s = new String[3];     s[0]="hello";     s[1]="world"; } out.println(s[0]);</pre>
<b>QUESTION 18</b>  Which of the following replaces <*1> without a syntax error? A. short                      B. int                      C. byte D. A and B only                E. A, B, and C	<pre>&lt;*1&gt; x = 100; switch(x) {     // code not shown }</pre>
<b>QUESTION 19</b>  Which of the following best describes the sort algorithm that is used by <code>Arrays.sort()</code> ? A. quicksort                      B. mergesort                      C. selection sort                      D. A and B only                      E. A, B, and C	
<b>QUESTION 20</b>  Which of the following interfaces does <code>TreeMap</code> implement? A. Map                      B. SortedMap                      C. Collection                      D. A and B only                      E. A, B, and C	

<b>QUESTION 21</b> What is output by the code to the right? A. 11      B. 17      C. 2      D. 24      E. 9	<pre>out.println( 01 + 0x1 );</pre>
<b>QUESTION 22</b> What is output by the code to the right? A. 0      B. 1      C. 2      D. 3      E. -1	<pre>int[] a = {1,4,9,12,67,88}; int pos = Arrays.binarySearch(a,12); out.println(pos);</pre>
<b>QUESTION 23</b> What is output by line 2 in the code to the right? A. 1 B. 2 C. 4 D. 88 E. 99	<pre>class A {     public void modOne(int[] list,                       int x, int v) {         list[x]=v;     }     public void modTwo(int[] list) {         list=new int[2];         list[0]=99;         list[1]=88;     } }  public static void main(     String args[]) {     A test = new A();     int[] ray = {1,2,3,4,5};     test.modOne(ray,0,4);     out.println(ray[0]);    //line 1     test.modTwo(ray);     out.println(ray[1]);    //line 2 }</pre>
<b>QUESTION 24</b> What is output by line 2 in the code to the right? A. 1 B. 2 C. 4 D. 88 E. 99	<pre>public static void main(     String args[]) {     A test = new A();     int[] ray = {1,2,3,4,5};     test.modOne(ray,0,4);     out.println(ray[0]);    //line 1     test.modTwo(ray);     out.println(ray[1]);    //line 2 }</pre>
<b>QUESTION 25</b> What is the <i>last</i> value output by the code to the right? A. 4      B. 7      C. 10      D. 13      E. error	<pre>for(int i=1;i&lt;12;i+=3)     out.println(i);</pre>
<b>QUESTION 26</b> What is output by the code to the right? A. 1      B. 1.0      C. 0      D. 0.0      E. error	<pre>double x = 8.0%2; out.println(x);</pre>
<b>QUESTION 27</b> What is output by the code to the right? A. 733TWHOOT      B. ---TWH--T C. -----      D. -TWH-T E. WHOOT	<pre>String s = "733TWH00T"; s = s.replaceAll("\\d+", "-"); out.println(s);</pre>
<b>QUESTION 28</b> What is output by the code to the right? A. 20      B. 36 C. 28      D. 45 E. 25	<pre>int x[] = {1,2,3,4,5,6,7,8,9}; int sum = 0; for(Integer i : x)     if(i%2 == 1)         sum += i; out.println(sum);</pre>

<p><b>QUESTION 29</b></p> <p>What is output by the code to the right?</p> <p>A. true 10                      B. true 9                      C. true 8 D. false 10                      E. false 8</p>	<pre>int x = 7; boolean t = (x++&gt;7   ++x&gt;8   x++&gt;9); out.println(t + " " + x);</pre>
<p><b>QUESTION 30</b></p> <p>What is output by the code to the right?</p> <p>A. 2.7                              B. 2.78                              C. 2.79 D. 2.790                              E. syntax error</p>	<pre>out.printf("%.3f\n",2.789542);</pre>
<p><b>QUESTION 31</b></p> <p>What is returned by fun(3,4)?</p> <p>A. 12                      B. 14                      C. 15                      D. 16                      E. 21</p>	<pre>public int fun(int x, int y) {     if(y &lt; 1)         return x;     else         return fun( x, y - 1) + x; }</pre>
<p><b>QUESTION 32</b></p> <p>What is returned by fun(2,15)?</p> <p>A. 4                      B. 8                      C. 16                      D. 32                      E. 64</p>	
<p><b>QUESTION 33</b></p> <p>Which of the following statements replaces <b>&lt;*1&gt;</b> so that WildCat can be compared to other WildCats without a cast?</p> <p>A. Comparable&lt;WildCat&gt; B. Comparable&lt;Object&gt; C. &lt;WildCat&gt;Comparable D. Comparable&lt;String&gt; E. more than one of these</p>	<pre>class WildCat implements &lt;*1&gt; {     public WildCat() {     }      public int compareTo(WildCat obj) {         &lt;*2&gt;     }      private Integer size; }</pre>
<p><b>QUESTION 34</b></p> <p>Assume <b>&lt;*1&gt;</b> is filled correctly. Which of the following statements would fill <b>&lt;*2&gt;</b> so that the size instance variables of two WildCats could be compared?</p> <p>A. return size&gt;obj.size; B. return obj.size&gt;size; C. return size.compareTo(obj.size); D. return obj.size.compareTo(size); E. return obj.size.compareTo(obj.size);</p>	
<p><b>QUESTION 35</b></p> <p>What is the expected average case Big O of the method test? Choose the most restrictive answer?</p> <p>A. <math>O(n^2)</math> B. <math>O(n)</math> C. <math>O(\log n)</math> D. <math>O(n \log n)</math> E. <math>O(1)</math></p>	<pre>public void test(int[] x) {     for(int i=0; i&lt;x.length; i++){         x[i] = 9;     } }</pre>

**QUESTION 36**

What is output by line 1 in the code to the right?

- A. 0
- B. 1
- C. 2
- D. 3
- E. 5

```
class A {
    private int one;

    public A(){
        one=1;
    }
    public A(int num){
        one=num;
    }
    public void set() {
        one=3;
    }
    public String toString(){
        return "" + one;
    }
}
```

**QUESTION 37**

What is output by line 2 in the code to the right?

- A. 0
- B. 1
- C. 2
- D. 3
- E. 5

```
class B extends A {
    private int one;
    public B() {
        one=2;
    }
    public B(int num){
        one=num;
    }
    public void setEm(){
        one=5;
        set();
    }
    public String toString() {
        return super.toString() + " " + one;
    }
}
```

**QUESTION 38**

What is output by line 3 in the code to the right?

- A. 1 2
- B. 1 5
- C. 5 5
- D. 3 3
- E. 3 5

```
class C {
    public static void main(String args[]) {
        A test = new A();
        out.println(test);           //line 1
        test.set();
        out.println(test);           //line 2
        test = new B();
        out.println(test);           //line 3
        ((B)test).setEm();
        out.println(test);           //line 4
        test.set();
        out.println(test);           //line 5
    }
}
```

**QUESTION 39**

What is output by line 4 in the code to the right?

- A. 1 2
- B. 1 5
- C. 2 5
- D. 3 3
- E. 3 5

**QUESTION 40**

What is output by line 5 in the code to the right?

- A. 1 2
- B. 1 5
- C. 2 5
- D. 3 3
- E. 3 5