

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 24_9 plus 20_7 ?	
A. 36_8 B. 32_{10} C. $1E_{16}$ D. 36_{10} E. 39_8	
QUESTION 2	
What is output by the code to the right?	<pre>int num1 = 6; int num2 = 8; System.out.println(num2 + num1);</pre>
A. 14 B. 12 C. 15 D. 11 E. 13	
QUESTION 3	
What is output by the code to the right?	<pre>int total = 8; total += 2; total -= 3; total *= 2; System.out.println(total);</pre>
A. 16 B. 11 C. 10 D. 14 E. 18	
QUESTION 4	
What is output by the code to the right?	<pre>int m = 0; for(int i = 19; i > -5; i--) m++; System.out.println(m);</pre>
A. 24 B. 23 C. 27 D. 22 E. 25	
QUESTION 5	
What is output by the code to the right?	<pre>String thing = "theraincometh"; thing = thing.substring(3,7); System.out.println(thing + "ing");</pre>
A. rain B. raining C. eraining D. ain E. bringtheing	
QUESTION 6	
What is output by the code to the right?	<pre>int[] ar = {12, 3, 9, 2, 5}; System.out.println(ar[ar[3]]*3);</pre>
A. 15 B. 9 C. 36 D. 27 E. 6	
QUESTION 7	
What is output by the code to the right?	<pre>boolean one = true; boolean two = false; System.out.print(one & two); System.out.print(" "); System.out.print(two ^ one && !two);</pre>
A. true true B. true false C. false true D. false true false E. false false	
QUESTION 8	
What is output by the code to the right?	<pre>int ben = 9; int sam = 5; if(ben > sam * 2) if(sam < ben) sam *= 2; else sam--; else ben -= 10; System.out.println(ben * sam);</pre>
A. 45 B. 10 C. 90 D. -5 E. There is no output due to a syntax error.	

<p>QUESTION 9</p> <p>What is output by the code to the right?</p> <p>A. 5 B. 5.0 C. 10.0 D. 10 E. 9.0</p>	<pre>System.out.println(7 + 2 * 4.0 - 6);</pre>
<p>QUESTION 10</p> <p>Which of the following could fill <*1>? <*1> variable = 32767;</p> <p>I. Integer II. Character III. Double IV. Long V. Short</p> <p>A. I and II only D. I, III, IV, and V only B. I, II, and V only E. II only C. I,II,III and IV only</p>	
<p>QUESTION 11</p> <p>What is output by the code to the right?</p> <p>A. 6 B. 6.0 C. 9 D. 9.0 E. 27.0</p>	<pre>System.out.println(Math.pow(3, 2));</pre>
<p>QUESTION 12</p> <p>What is output by the code to the right?</p> <p>A. 99 B. 0,99 C. 99,00 D. 0099 E. ,099</p>	<pre>String f = "%0,4d"; int num = 99; System.out.printf(f, num);</pre>
<p>QUESTION 13</p> <p>What is output by the code to the right?</p> <p>A. "\" B. "\\\" C. "" D. "\" E. "\\\"</p>	<pre>System.out.println("\"\"\\\"");</pre>
<p>QUESTION 14</p> <p>What is output by the code to the right?</p> <p>A. 5 B. 3 C. 6 D. 2 E. 7</p>	<pre>int[][] mat = {{1, 2}, {5, 3, 7, 5, 1, 2, 3}, {3, 4, 5, 6, 1, 2}}; System.out.println(mat[1].length);</pre>
<p>QUESTION 15</p> <p>How many "*"s will be output by the code to the right?</p> <p>A. 10 B. 27 C. 25 D. 30 E. 40</p>	<pre>for(int i = 0; i <= 5; i++) { for(int j = i; j>=0; j--) System.out.println("*"); System.out.println("*"); }</pre>

<p>QUESTION 16</p> <p>What is output by the code to the right?</p> <p>A. 1f3?rg^4g5&76du4&6 B. 13457646 C. 10304050760406 D. 0 E. 0?0^0&0&0</p>	<pre>String str = "1f3?rg^4g5&76du4&6"; str = str.replaceAll("\\w+", "0"); System.out.println(str);</pre>
<p>QUESTION 17</p> <p>What is output by the code to the right?</p> <p>A. 16 B. 27 C. 24 D. 18 E. 31</p>	<pre>int b = 18; int n = 41; System.out.println(b n & b);</pre>
<p>QUESTION 18</p> <p>What is output by the code to the right?</p> <p>A. 11 B. 12 C. 13 D. 14 E. 15</p>	<pre>int b1 = 1; if(++b1 > 1 b1++ > 1 & ++b1 > -1) b1 += 10; System.out.println(b1);</pre>
<p>QUESTION 19</p> <p>What is output by the code to the right?</p> <p>A. [dag, dig, dog, dug] B. [dag, deg, dig, dog, dug] C. [deg, dig, dug] D. [dag, deg, dug] E. [dig, dog, dug]</p>	<pre>ArrayList<String> ar; ar = new ArrayList<String>(); ar.add("dog"); ar.add("dig"); ar.set(0,"dug"); ar.add(0,"dag"); ar.set(2,"deg"); Collections.sort(ar); System.out.println(ar);</pre>
<p>QUESTION 20</p> <p>What is output by the code to the right?</p> <p>A. 17 34 B. 2 0 C. 2 2 D. 0 2 E. There is no output due to a runtime error.</p>	<pre>int p = 17; int c = 34; System.out.print(c / p % 7 + " "); System.out.print(c % p * 7);</pre>
<p>QUESTION 21</p> <p>What is output by the code to the right?</p> <p>A. 34 B. 30 C. 26 D. 25 E. 33</p>	<pre>String k = "aaaaphabets0000oups"; String a = "aaaardvaarc0000kees"; int num = 0; int i = 0; while(i < k.length()) { int c = 0; while(i < k.length() && k.charAt(i) == a.charAt(i++)) c++; num += c * c; } System.out.println(num);</pre>

<p>QUESTION 22</p> <p>What is returned by the method call <code>huh(11.0f, 11.0f)</code>?</p> <p>A. 77 B. 33 C. 44 D. true E. false</p>	<pre>public int huh(Object x, Object y) { if(x == y) return 33; return 77; }</pre>
<p>QUESTION 23</p> <p>What is returned by the method call <code>huh('A', 'A')</code>?</p> <p>A. 77 B. 33 C. 44 D. true E. false</p>	
<p>QUESTION 24</p> <p>What replaces <*1> in the code to the right so that method <code>toString()</code> has the appropriate return value?</p> <p>A. char B. int C. void D. int E. String</p>	<pre>public class OldMan { private int x = 2; public OldMan(int n) { x = n; } public void fun(int n) { x += n; } public <*1> toString() { return "" + x; } }</pre> <pre>public class Son extends OldMan { public Son(int n) { super(n*2); } public void fun(int n) { super.fun(n); super.fun(n); } public void go(int n){ fun(n); super.fun(n); } public String toString() { return super.toString(); } }</pre>
<p>Assume <*1> is filled in correctly.</p>	
<p>QUESTION 25</p> <p>What is output by the line marked //1 in the client code to the right?</p> <p>A. 30 B. 29 C. 22 D. 36 E. 32</p>	<pre>//////////////////////////////////// //client code OldMan dad = new OldMan(5); dad.fun(5); dad.fun(12); System.out.println(dad); //1 dad = new Son(3); dad.fun(4); ((Son)dad).go(8); System.out.println(dad); //2</pre>
<p>QUESTION 26</p> <p>What is output by the line marked //2 in the client code to the right?</p> <p>A. 38 B. 36 C. 42 D. 46 E. 32</p>	<pre>//////////////////////////////////// //client code OldMan dad = new OldMan(5); dad.fun(5); dad.fun(12); System.out.println(dad); //1 dad = new Son(3); dad.fun(4); ((Son)dad).go(8); System.out.println(dad); //2</pre>

QUESTION 27

What type of sort is the code to the right ?

- A. insertion sort
- B. merge sort
- C. quick sort
- D. radix sort
- E. selection sort

```
int[] stf = {6,4,7,1,5,9,10,12,-2};

for(int i=1; i< stf.length; ++i)
{
    int val = stf[i];
    int j = i;
    while( j > 0 && val < stf[j-1]){
        stf[j] = stf[j-1];
        j--;
    }
    stf[j]=val;
}

out.println( Arrays.toString(stf) );
```

QUESTION 28

What is output by the code to the right?

- A. [-2, 1, 4, 5, 6, 7, 9, 10, 12]
- B. [6, 4, 7, 1, 5, 9, 10, 12, -2]
- C. [12, 10, 9, 7, 6, 5, 4, 1, -2]
- D. There is no output due to a syntax error.
- E. There is no output due to a runtime error.

QUESTION 29

What is returned by the method call `rec(41)?`

- A. 3
- B. 4
- C. 5
- D. 7
- E. 8

```
public int rec(int n) {
    if(n <= 0)
        return 1;
    return rec(n/3) + 1;
}
```

QUESTION 30

What is returned by the method call `rec(292)?`

- A. 7
- B. 6
- C. 5
- D. 4
- E. 8

QUESTION 31

What is output by the code to the right?

- A. 0
- B. 2
- C. 90
- D. 45
- E. 3

```
System.out.println( 45 % 90 * 2);
```

QUESTION 32

What is output by the code to the right?

- A. 4
- B. 5
- C. 8
- D. 9
- E. 10

```
int j = 12;
int c = 0;
do {
    if((j & 1) == 1) {
        int k = j + 1;
        j = j << 1;
        j += k;
    } else {
        j = j >> 1;
    }
    c++;
} while(j != 1);
System.out.println(c);
```

QUESTION 33

Which of the following could replace **<*1>** in the code to the right so that variable dude will be defined as a reference to a Stack that will contain objects of type String, allowing all following code to compile without error?

- A. Stack<String>
- B. List<String>
- C. Collection<String>
- D. A and B only
- E. A, B, and C

QUESTION 34

Assuming that **<*1>** is filled correctly, which of the following could replace **<*2>** in the code to the right so that the object at the top of the stack is removed and printed?

- A. remove()
- B. pop()
- C. get(dude.size()-1)
- D. A and B only
- E. A, B, and C

```
<*1> dude = new Stack<String>();
dude.push("cat");
dude.push("bob");
dude.push("dog");
dude.push("ant");
while(!dude.isEmpty())
    System.out.print(dude.<*2> + " ");
```

QUESTION 35

Assuming that **<*1>** and **<*2>** are filled correctly, what is output by the code to the right?

- A. cat bob dog ant
- B. ant bob cat dog
- C. dog bob ant cat
- D. ant dog bob cat
- E. dog cat bob ant

QUESTION 36

What is the output of crazy(256)?

- A. 11
- B. 22
- C. 32
- D. 24
- E. 16

```
public static int crazy(int n)
{
    boolean[] lights = new boolean[n];
    for(int i = 1; i <= n; i++)
    {
        for(int k = i; k <= n; k += i)
        {
            lights[k - 1] = !lights[k - 1];
        }
    }
}
```

QUESTION 37

What is the output of crazy(512)?

- A. 11
- B. 22
- C. 32
- D. 24
- E. 16

```
int cnt = 0;
for(boolean b : lights)
{
    if(b) cnt++;
}
return cnt;
}
```

QUESTION 38

What is output by the code to the right?

- A. 0
- B. 8
- C. 32
- D. 2
- E. 16

```
int b = 256 >> 7 | 2 & 18 >>> 3;
System.out.println( b );
```

QUESTION 39

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

- A. 3
- B. 5
- C. 6
- D. 7
- E. 0

```
String it = "$$one$big$$dog$fun$$";
String[] si = it.split("\\$");

System.out.println(si.length); //1
```

```
for(int i = 0; i < si.length; i++)
    if(si[i].matches("\\S+"))
        si[i] = "";
    else
        si[i] = "e";
```

QUESTION 40

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

- A. [e, e, , , e, ,]
- B. [, one, big, , dog, fun,]
- C. [, , one, big, , dog, fun,]
- D. [, , one, big, , dog, fun]
- E. [e, e, one, big, e, dog, fun]

```
List<String> li = Arrays.asList(si);
System.out.println(li); //2
```