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 the result of $AA1_{14}$ minus $AA1_{11}$?

A. 1100001111_2 B. 1100001101_2 C. $30C_{16}$ D. 1416_8 E. 781

QUESTION 2

What is output by the code to the right?

A. 0.0 B. 12 C. 6.0 D. 8 E. 6

```
int x = 2;
int y = 4;
System.out.println(x += x + y);
```

QUESTION 3

What is output by the code to the right?

A. 12 B. 8.0 C. 7 D. 9.0 E. 20

```
int x=12;
for(int i=4;i<x;i+=2)
   x++;
System.out.println(x);
```

QUESTION 4

What is output by the code to the right?

A. A B. ARD C. RARK D. RDV E. ARK

```
String t = new String("AARDVARK");
String s = t;
s = t.substring(2,3);
s += t.substring(5);
System.out.print(s);
```

QUESTION 5

What is output by the code to the right?

A. A B. D C. 0 D. -68 E. 68

```
char[] a = new char[9];
System.out.println((char)a[5%2]+68);
```

QUESTION 6

What is output by the code to the right?

A. false B. true
C. 0 D. 1
E. 4

```
System.out.println(Math.sqrt(4)*2>4);
```

QUESTION 7

What is output by the code to the right?

A. null CHAMPIONS
B. U CHAMPIONS
C. UIL
D. L CHAMPIONS
E. UIL CHAMPIONS

```
char x = 'u';
String s = null;
switch (x){
  case 0: s += "U";
  case 65: s += "I";
  case 115: s += "L";
  default : s += " CHAMPIONS";
}
System.out.println(s);
```

QUESTION 8

What is output by the code to the right?

A. 23
B. 63
C. 32
D. 128
E. 272

```
System.out.print(46 | 23 );
```

QUESTION 9

What is returned by the method call `myMethod("e")` ?

A. `0` B. `48` C. `3` D. `-8` E. `4`

QUESTION 10

What is returned by the method call `myMethod("x")` ?

A. `0` B. `48` C. `3` D. `-8` E. `4`

```
public int myMethod(String s){
String s1 = "There are no problems";
int c = 0, f = s1.length();
while(f>-1){
      f=s1.indexOf(s);
      s1=s1.substring(f+1);
    if(f > -1) c++;
}return c;
```

QUESTION 11

What is the output?

A. `true true true` B. `true 1 false`
C. `false 0 true` D. `true 0 true`
E. `false 1 false`

```
String x = "Java";
String y = new String("Java");
out.print(x == y);
out.print(" "+x.compareTo(y)+" ");
out.println(x.equals(y));
```

QUESTION 12

What is output by the code to the right ?

A. `error` B. `123` C. `s` D. `0` E. `-1`

```
System.out.printf
("%s\n","123abc".indexOf(123));
```

QUESTION 13

What is returned by the method call `div(2,4)` ?

A. `6` B. `0.0` C. `0.5` D. `2.0` E. `8`

```
public double div(int x, int y){
   return x/y;
}
```

QUESTION 14

What is output by the code to the right ?

A. `02233` B. `AEIOU`
C. `true` D. `false`
E. `6567697275`

```
char x = 65;
String s="";
int[] c = {0,2,2,3,3};
for(int i=0;i<5;i++){
  x+=2*c[i];
  s+=x;
}
System.out.println(s);
```

QUESTION 15

How many times will this loop iterate?

A. `5` B. `7` C. `111`
D. `3` E. infinitely

```
int i = 333;
do {
 i /= 3;
}while(i > 1);
```

QUESTION 16

What is returned by the method call `my( 3, "1212")` ?

A. `50.0` B. `1212.0` C. `0`
D. `44.0` E. `2`

QUESTION 17

What is returned by the method call `my( 12, "1BC")` ?

A. `16667.0` B. `100.0` C. `0`
D. `288.0` E. `2`

```
private double my(int b, String n){
  int p = n.length()-1, total=0;
  String c = "0123456789ABCDEF";
  Map<Integer, Double > map;
  map = new TreeMap<Integer, Double>();
  for(int x=0; x<16; x++)
    map.put( x , Math.pow(b,x) );
  for(int x=0; x<n.length(); x++){
    int t = c.indexOf(n.charAt(p-x));
    total += t * map.get(x);
  }
  return total;
}
```

QUESTION 18

What is the output?

A. `312546` B. `123456` C. `341233`

D. `654321` E. `345123`

```
String a = "", b = "123456";
for (int i=0;i<b.length()-1;i++)
 a += (char)(b.charAt((i+2)%4));
System.out.println(a + 3);
```

QUESTION 19

What is the value of `m[3][2]` when the code to the right is executed ?

A. `1` B. `3` C. `12` D. `5` E. `9`

```
int[][] m = new int [5][3];
for(int c=1; c<m[0].length; c+=1)
  for(int r=0; r<m.length; r+=1)
    m[r][c] = r / c;
```

QUESTION 20

What is the output?

A. `5`

B. `15`

C. `12`

D. `16`

E. 4

```
String a = "MISSISSIPPI MISS";
Set ts = new TreeSet();
for (int i=0;i<a.length();i++)
  ts.add(new Character(a.charAt(i)));
System.out.println(ts.size());
```

QUESTION 21

What is output by the code to the right ?

A. `[34, 24, 11, 5]`

B. `[24, 11, 5, 34]`

C. `[5, 24, 11, 34]`

D. `[5, 11, 24, 34]`

E. `11, 5, 34, 24]`

```
ArrayList m;
m = new ArrayList <Integer>();
m.add(34);
m.add(5);
m.add(11);
m.add(24);
Collections.reverse(m);
System.out.println(m);
```

QUESTION 22

What is output by the code to the right ?

A. `11`

B. `-12`

C. `3`

D. `4`

E. `12`

```
int [] a = {11, -12, 3, 4, 8};
a[1] = 12;
Arrays.sort(a);
System.out.print(a [1]);
```

QUESTION 23

What is output by the code to the right?

A. `241`

B. `24.01`

C. `2`

D. `7.0`

E. error

```
Object[] x = {2,
                Math.floor(4.2),
                           "1"};
String total = "";
for(Object y : x)
  total += y;
out.println(total);
```

QUESTION 24

Which correctly replaces **<*1>** in the code to the right so all elements of `part` are inspected?

A. `String word : def`

B. `word : part`

C. `String word : part`

D. `word : div`

E. `String word : out`

QUESTION 25

Assume **<*1>** was replaced correctly. What is the output by the line marked `//line 1`?

A. `our` B. `on` C. `n`

D. `way` E. `on our way`

QUESTION 26

Assume **<*1>** was replaced correctly. What is the output by the line marked `//line 2`?

A. `5` B. `6` C. `7` D. `8` E. `10`

```
String out = "";
String div = "[o a]";
String def = "on our way at last";
String[] part = def.split(div);
int cnt = 0;
for(  <*1>  )
{
  if(word.length()>0)
    cnt++;
}
System.out.println(part[1]); //line 1
System.out.println(cnt);     //line 2
```

QUESTION 27

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

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

QUESTION 28

What is output by the code to the right ?

A. `12 8 9` B. `13 9 10`

C. `14 10 11` D. `9 10 7`

E. `14 9 10`

```
int x = 12, y = 11, z = 0;
while(z < 3)
  z = (++x < --y) ? z++ : y--;
out.println(x + " " + y + " " + z);
```

QUESTION 29

What is output by the code to the right ?

A. `6` B. `5` C. `2` D. `3` E. `4`

```
String s="it could be worse";
String[] t =s.split("[aeiou]");
System.out.print( t.length );
```

QUESTION 30

What is the output?

A. `[4, 2, 1]`

B. `[6, 8, 5]`

C. `[4, 1, 3]`

D. `[4, 3]`

E. `[4, 1]`

```
Stack<Integer> s;
s = new Stack<Integer>();
s.push(4);
s.push(2);
s.pop();
s.push(3);
s.push(1);
s.pop();
s.peek();
out.println(s);
```

QUESTION 31

What are the smallest values of `r` and `c` that could be used to hold matrix `m` created by this code segment?

A. `r=5, c=5` B. `r=5, c=4` C. `r=6, c=5`

D. `r=6, c=4` E. `r=6, c=6`

QUESTION 32

What is the output of the code segment?

A. `4 3` B. `0 2` C. `3 2` D. `0 0` E. `0 3`

QUESTION 33

Which of the following is true of matrix `m` after the code at right is executed?

A. The first row is all zeros.

B. The first column is all zeros.

C. The last row is all zeros.

D. The last column is all zeros.

E. There are no rows or columns that are all zeros.

```
int [][] m = new int[r][c];
for(int i = 4; i >= 0; i--)
 for(int j = 0; j < i; j++)
   m[i][j] = i + j;
out.print(m[1][2] + " " + m[2][0]);
```

QUESTION 34

What is the output?

A. `3`

B. `6`

C. `12`

D. `24`

E. `48`

```
char x = '1';
System.out.println(x >> 4 & 6 | 3);
```

QUESTION 35

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

```
Set x = <*1>
```

A. `new TreeMap();`

B. `new LinkedList();`

C. `new HashMap();`

D. `new TreeSet();`

E. more than one of these

QUESTION 36

What values of x and y will make the expression to the right true ;

A. `true true`

B. `true false`

C. `false true`

D. `false false`

E. all of these

```
boolean x, y, z;
z = !(x && y) && !(x || y);
```

QUESTION 37

What is the output by the line marked `//line 1`?

A. `0`
B. `2`
C. `null`
D. `5`
E. error

QUESTION 38

What is the output by the line marked `//line 2`?

A. `8`
B. `2`
C. `0`
D. `5`
E. error

```
class A{
   private int x=0;
   public A(){ x=2; }
   public A(int x){ this.x=x; }
   public String toString(){
      return x+" ";
   }
   {
      x=3;
   }
}

class B extends A{
   public B(){ super(5);}
   public String toString(){
      return super.toString();
   }
}

////////////////////////////////////
/////// client code
A x = new A();
out.println(x);      //line 1
x = new B();
out.println(x);      //line 2
```

QUESTION 39

What is the output by the line marked `//line 1`?

A. `123`
B. `321`
C. `456`
D. `999`
E. error

QUESTION 40

What is the output by the line marked `//line 2`?

A. `123`
B. `321`
C. `456`
D. `999`
E. error

```
PriorityQueue <String> q;
q = new PriorityQueue();
q.add("123");
q.add("321");
q.add("456");
out.println(q.remove());   //line 1
q.add("999");
out.println(q.remove());   //line 2
```