Note: Correct responses are based on Java, J2sdk v 7.0, 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 15_8 plus 46_8 ?

A. 99_7 B. $3C_{13}$ C. 39_{16} D. 313_4 E. 452_{12}

QUESTION 2

What is output by the code to the right?

A. 5 B. 6 C. 7 D. 0 E. 4

```
int x = 14;
int y = 56;
System.out.println( y / x );
```

QUESTION 3

What is output by the code to the right?

A. 13 B. 11 C. 10 D. 20 E. 0

```
int z = 7;
z += 2 + 4;
System.out.println( z );
```

QUESTION 4

What is output by the code to the right?

A. 9 B. 10 C. 8 D. 11 E. 12

```
int x = 0;
for(int i = 20; i > -10; i=i-4)
  x++;
System.out.println( x );
```

QUESTION 5

What is output by the code to the right?

A. 7 B. 1 C. -1

D. 0 E. 6

```
String thing = "apluscompscirocks";
Integer p = thing.indexOf(97);
System.out.println(p);
```

QUESTION 6

What is output by the code to the right?

A. 3 B. 5 C. 1 D. 2 E. 8

```
int[] ar = {1, 1, 2, 3, 3, 4, 4};
System.out.println(ar[ar[3]]);
```

QUESTION 7 xx

What is output by the code to the right?

A. 0true

B. 0false

C. true

D. false

E. There is no output due to a syntax error.

```
boolean b = true, c = false;
if( b ^ c && b )
   out.print(0);
out.println(c);
```

QUESTION 8 xx

What is output by the code to the right?

A. 7 14

B. 14 7

C. 7 6

D. 10 7

E. There is no output due to a runtime error.

```
int b = 10, bb = 15;
b /= 2;
b *= 2;
bb /=2;
out.print(b + " " + bb);
```

QUESTION 9

What is output by the code to the right?

A. `-4.0`
B. `5.0`
C. `3.0`
D. `-5.0`
E. `-1.0`

```
System.out.println(6 * 2 / 4.0 - 8);
```

QUESTION 10 xx

What is output by the code to the right?

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

```
TreeMap<String, String> map;
map = new TreeMap<String, String>();
map.put("aplus","ben");
map.put("fred","ben");
map.put("chuck","ben");
map.put("aplus","ben");
map.put("ben","aplus");
map.put("ben","top");
out.println(map.size());
```

QUESTION 11 xx

What is output by the code to the right?

A. `0`
B. `1`
C. `3`
D. `4`
E. `5`

```
Scanner sc;
sc = new Scanner("bob\nbear\npiggy");
sc.next();
out.println(sc.next().length());
```

QUESTION 12

What is output by the code to the right?

A. `000674`
B. `674`
C. `00,674`
D. `674000`
E. `476`

```
String format = "%0,6d";
int number = 674;
System.out.printf(format,number);
```

QUESTION 13 xx

What should replace **<*1>** in the code to the right so the client code compiles and runs without errors?

A. `this`
B. `Pear`
C. `static`
D. A and B only
E. A, B, and C

```
public class Pear
{
   static int[] arr = {3,1,4,1,5,9};
   int seeds = 0;

   public Pear(int n)
   {
      seeds = <*1>.arr[n];
   }
}

////////////////////////////////////
// client code
Pear bob = new Pear(21);
```

QUESTION 14 xx

What is returned by `x(10)` ?

A. `121`
B. `84`
C. `189`
D. `205`
E. `220`

QUESTION 15 xx

What is returned by `x(7)`?

A. `121`
B. `84`
C. `189`
D. `205`
E. `220`

```
public static int x(int n)
{
   int count = 0;
   for(int a = 0; a <= n; a++)
      for(int b = 0; b <= n; b++)
         for(int c=0; c <= n; c++)
         {
            if( a + b + c > n * 2 )
               count++;
         }

   return count;
}
```

QUESTION 16

What is output by the code to the right?

A. `16151413121110917161514`
B. `765432108765`
C. `6151413121110197161514 1`
D. `979695949392919089888786`
E. `796959493929190998887868`

```
for(int i=97; i>=86; i--)
  out.print(i%10+i/10);
```

QUESTION 17

What is output by the code to the right?

A. `fenris`
B. `isisis`
C. `ssssss`
D. `nrfesi`
E. `nrisfe`

```
String str = "fenris";
for(int i=0; i<str.length(); i++)
{
  int j=(i+2)%str.length();
  char a = str.charAt(i);
  str = str.replace(a,str.charAt(j));
}
out.println(str);
```

QUESTION 18

What is output by the code to the right?

A. `w,ar,th,peo,`
B. `who,are,these,people,`
C. `who,ar,t,,`
D. `who,are,th,p,`
E. `,a,th,peo,`

```
String[] x;
x = "who are these huh".split(" ");
int len = x.length-1;
for(int i=0; i<x.length; i++)
  x[len-i] = x[len-i].substring(0,i);
for(String str:x)
  out.print(str+",");
```

QUESTION 19

What is output by the code to the right?

A. `[doon, donah, donut]`
B. `[donut, doon]`
C. `[don, donut, doon]`
D. `[don, donut, donah]`
E. `[donah, donut, doon]`

```
ArrayList<String> lst;
lst = new ArrayList<String>();
lst.add(0,"don");
lst.add(1,"donah");
lst.set(1,"donut");
lst.add(0,"doon");
Collections.sort(lst);
System.out.println(lst);
```

QUESTION 20

What is output by the code to the right?

A. `true` B. `false`

C. `y` D. `funnystuff`

E. There is no output due to a runtime error.

```
String s = "apluscompscirocks";
boolean b = s.matches(".*sci.*");
System.out.println(b);
```

QUESTION 21

What is output by the code to the right?

A. `-62` B. `60` C. `-60` D. `-61` E. `61`

```
int x = 86;
int y = x / 4 - x / --x;
int z = x++/y++;
out.println(z++ + y - x);
```

QUESTION 22

What is returned by the method call `xx(11L, 11L)`?

A. `4` B. `-2` C. `0` D. `true` E. `false`

QUESTION 23

What is returned by the method call `xx(2.0f, 2.0f)`?

A. `4` B. `-2` C. `0` D. `true` E. `false`

```
public int xx(Object o1, Object o2){
  int ret = 1;
  if(o1==o2)
    ret += 3;
  else
    ret += -3;
  return ret;
}
```

QUESTION 24

Which of the following lines to the right will cause an exception to be thrown?

A. `//line 1`

B. `//line 2`

C. `//line 3`

D. `//line 4`

E. None of the lines at right will cause an exception.

QUESTION 25

Which of the following is true when listed about potential exceptions in a try catch block?

A. The order of the exceptions is not important.

B. The least specific exceptions must be listed first.

C. The most specific exceptions must be listed first.

D. Only two types of exceptions can be listed.

E. More than one of these.

QUESTION 26

What is returned by a call to method `go()`?

A. `7`

B. `5`

C. `3`

D. `1`

E. `6`

```
public static int go()
{
 String s = "a+-comp-sci-rocks";
 Integer pos = 0;
 try
 {
   pos = s.indexOf("-");      //line 1
   s = s.substring(pos-5);    //line 2
 }
 catch(RuntimeException e)
 {
   return pos++;              //line 3
 }
 catch(Exception e)
 {
   return pos++;
 }
 finally
 {
   pos+=2;
   return pos;                //line 4
 }
}
```

QUESTION 27

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

A. `[C, W, T, M, E, N]`

B. `[A, C, L, N, T, W]`

C. `[T, L, T, W, N, L]`

D. `[A, C, W, T, N, L]`

E. `[A, C, N, L, T, W]`

QUESTION 28

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

A. `[A, C, E, L, M, N, W]`

B. `[E, N]`

C. `[E, N, C, L, W]`

D. `[C, E, N]`

E. `[C, E, L, N, W]`

```
TreeMap<String,TreeSet<String>> x;
x = new TreeMap<String,TreeSet<String>>();
x.put("A",new TreeSet<String>());
x.put("C", new TreeSet<String>());
x.put("W",new TreeSet<String>());
x.put("T",new TreeSet<String>());
x.put("N",new TreeSet<String>());
x.put("L",new TreeSet<String>());
x.get("A").add("C");
x.get("W").add("W");
x.get("N").add("T");
x.get("C").add("M");
x.get("T").add("E");
out.println(x.keySet()); //<*1>
x.get("T").add("N");
x.get("L").add("E");
x.get("T").add("C");
x.get("W").add("A");
x.get("N").add("L");
x.get("L").add("N");
x.get("W").add("T");
out.println(x.get("T")); //<*2>
```

QUESTION 29

What value of x will cause an infinite loop in the code to the right?

A. `0`

B. `15`

C. `45`

D. `30`

E. There is no value listed that will cause an infinite loop.

QUESTION 30

What is returned by the method call `wer(5)` ?

A. `9` B. `24`

C. `63` D. `48`

E. `39`

```
public static int wer(int x)
{
  if (x<3)
     return x*3;
  return wer(x-2)+wer(x-1);
}
```

QUESTION 31

What is output by the code to the right?

A. `15` B. `16`

C. `12` D. `14`

E. `11`

```
int[][] mat = new int[3][6];
int x = 5;
for(int r=0; r<3; r++)
  for(int c=0; c<6; c++)
     mat[r][c] = x++;
out.println(mat[1][4]);
```

QUESTION 32

What is output by the code to the right?

A. `[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]`

B. `[9]`

C. `[0, 0, 0, 0, 9, 0, 0, 0, 0, 0]`

D. `[1, 3, 5, 7, 9, 8, 6, 4, 2, 0]`

E. There is no output due to a runtime error.

```
ArrayList<Integer> list;
list = new ArrayList<Integer>();
for(int i=0; i<10; i++)
  list.add(list.size()/2,i);
out.println(list);
```

QUESTION 33

What is returned by the method call `shows(x)`, provided list is defined as

```
int[] x = {40,1,35,42,19,17};
```

A. `[CBS, NBC, CBS, CBS, ABC, NBC]`

B. `[FOX, CBS, FOX, NBC, HBO, NBC]`

C. `[FOX, CBS, NBC, ABC, HBO, FOX]`

D. `[HBO, FOX, HBO, CBS, ABC, CBS]`

E. `[FOX, HBO, FOX, FOX, ABC, NBC]`

```
public static String[] shows(int[] x)
{
  String[] sta =
     {"FOX","CBS","NBC","ABC","HBO"};
  int c = x.length;
  String[] temp = new String[c];
  for(int i=0; i<x.length; i++)
     temp[i]=sta[x[i]%sta.length];
  return temp;
}
```

QUESTION 34

What could the array x be in order to return the following array when `met(x)` is called:

```
[NBC, CBS, ABC, HBO]
```

A. `[35, 21, 14, 33]`

B. `[22, 44, 38, 28]`

C. `[17, 21, 6, 4]`

D. `[1, 24, 22, 39]`

E. `[27, 16, 48, 19]`

QUESTION 35

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

A. `"r"`

B. `""`

C. `"de is cool"`

D. `"ck "`

E. `"the black parade"`

QUESTION 36

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

A. `25` B. `16` C. `29` D. `17` E. `22`

QUESTION 37

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

A. `"the black "`

B. `""`

C. `"the"`

D. `"t"`

E. `"the black parade"`

```
String s;
s="the big black parade is cool";

String[] list;
list=s.split("[^a]a");

out.println(list[3]);              //1

list=s.split("");
out.println(list.length);          //2

out.println(list[0]);              //3
```

QUESTION 38

What is returned by `line 1` in the code to the right?

A. `1`

B. `7`

C. `5`

D. `3`

E. `4`

QUESTION 39

What is returned by `line 2` in the code to the right?

A. `1`

B. `7`

C. `5`

D. `3`

E. `4`

QUESTION 40

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

A. `78`

B. `55`

C. `60`

D. `85`

E. `81`

```
public class Weird
{
  private int y, x, d;
  public Weird(int y, int x, int d){
    this.y = y;
    this.x = x;
    this.d = d;
  }
  static int[] dx = {1,0,-1,0};
  static int[] dy = {0,1,0,-1};

  public static int solv(int sy,
                         int sx, int[][] f) {
    int n = f.length;
    LinkedList<Weird> q;
    q  = new LinkedList<Weird>();
    boolean[][] vis =
      new boolean[n][n];
    int diam = 0;
    q.add(new Weird(sy, sx, 0));
    while(q.size()>0){
      Weird c = q.removeFirst();
      int y = c.y, x = c.x, d = c.d;
      if(vis[y][x]) continue;
      vis[y][x] = true;
      diam = c.d;
      for(int j=0;j<4;j++){
        int ny = y + dy[j];
        int nx = x + dx[j];
        if(f[ny][nx] == 0){
          q.add(new Weird(ny, nx, d+1));
        }
      }
    }
    return diam;
  }
}

//////////client code ////////////////
int[][] f = {{1,1,1,1,1,1,1,1},
             {1,1,0,1,0,0,1,1},
             {1,1,1,0,0,0,0,1},
             {1,1,1,0,0,1,0,1},
             {1,1,0,1,0,0,0,1},
             {1,1,0,0,0,1,0,1},
             {1,1,1,1,1,1,1,1}};
int x = 0;
x = Weird.solv(4, 4, f);
System.out.println(x);        //line 1
x = Weird.solv(1, 1, f);
System.out.println(x);        //line 2
for(int i = 1; i < 5; i++) {
  for(int j = 1; j < 5; j++) {
    x += Weird.solv(i, j, f);
  }
}
System.out.println(x);       //line 3
```