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 1001_8 plus 1001_2 ?

A. 1012_8 B. 111110_2 C. 40_{16} D. 1101_8 E. 513

QUESTION 2

What is output by the code to the right?

A. 0 B. 7 C. 8 D. 6 E. 5

```
int y = 64;
int x = 8;
out.println( y / x);
```

QUESTION 3

What is output by the code to the right?

A. 30 B. 32 C. 22 D. 26 E. 25

```
int i=0,x=0;
for(i=0; i<25; i+=2)
   x += i;
System.out.println(i);
```

QUESTION 4

What is output by the code to the right?

A. 11 B. 0

C. 4 D. 5

E. 6

```
String s = "UIL MEETS BEGIN!";
System.out.print(s.indexOf('E'));
```

QUESTION 5

What is output by the code to the right?

A. 10 B. 11.0

C. 9.0 D. 32.0

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

```
int[] a = {3 , 5 , 7 , 9 , 2};
double t = a[ a[2] / a[4] ];
System.out.println(t);
```

QUESTION 6

What is output by the code to the right?

A. false B. true C. 0 D. 1 E. 1.0

```
double a = 2.7;
System.out.println( a % 2 < 0.5);
```

QUESTION 7

What is output by the code to the right?

A. spo B. spot

C. tops D. top

E. There is not output due to a syntax error.

```
char x = 'A';
switch(x){
  case 65: System.out.print("s");
  case 0: System.out.print("p");
  case 1: System.out.print("o");break;
  case 115: System.out.print("t");
}
```

QUESTION 8

What is output by the code to the right?

A. 27 B. 25 C. 29 D. 30 E. 32

```
int x = 92;
int sum = 0;
while( x > 1 ){
  sum += x%4;
  x -= 5;
}
out.println(sum);
```

QUESTION 09

What can replace `<*1>` in the class such that the class would compile?

A. `public Equation(double[] x)`

B. `public void Equation(double[] x)`

C. `public void Equation(ArrayList<Double> x)`

D. `public Equation(ArrayList<Double> x)`

E. `public Equation()`

QUESTION 10

What can replace `<*2>` in the class to the right such that it will calculate a polynomial equation where the array would hold the coefficients of the equation from the largest term to the smallest term (ex: ax^2+bx+c, would hold [a,b,c])?

A. `sum+=eq[x]*Math.pow(i, eq.length-1-i);`

B. `sum+=eq[eq.length-1-i]*Math.pow(i,x);`

C. `sum+=eq[i]*Math.pow(x, eq.length-1-i);`

D. `sum+=eq[eq.length-i]*Math.pow(x,i);`

E. `sum+=eq[x]*Math.pow(eq.length-1-i,i);`

```
public class Equation
{

 private double[] eq;

 <*1>
 {
  eq = new double[x.size()];
  for(int i=0; i<eq.length; i++)
     eq[i]=x.get(i);
 }

 public double solve(int x)
 {
  double sum = 0;
  for(int i=0; i<eq.length; i++)
     <*2>
  return sum;
 }

}
```

QUESTION 11

What is output by the code to the right?

A. `3.1400` B. `03.14`

C. `003.14` D. `3.140`

E. `003.1`

```
final double PI = 3.14159265;
out.printf("%05.2f", PI);
```

QUESTION 12

What is output by the code to the right ?

A. `1032` B. `33`

C. `113` D. `126`

E. `%s`

```
System.out.printf("%s","1"+015);
```

QUESTION 13

What is returned by the method call `pow(36,-2)` ?

A. `6` B. `16.0`

C. `4` D. `64.0`

E. `9`

```
public double pow(double x, double y){
   x = Math.sqrt(x);
   y = Math.abs(y);
   double z = Math.max(y,x);
   return Math.pow(Math.min(x,y),z);
}
```

QUESTION 14

What is output by the code to the right ?

A. `1.0` B. `4.0`

C. `7.0` D. `15.0`

E. `3.0`

```
int x = 30;
int y = 4;
double b;
b = x >> y;
System.out.print(b);
```

QUESTION 15

What is output by the code to the right ?

A. 100 B. 50

C. 25 D. 10

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

```
for(int sum = 0; sum>=100; sum+=10)
   sum += 5;
System.out.print(sum);
```

QUESTION 16

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

A. true B. false

C. 0 D. 1

E. 2

QUESTION 17

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

A. true B. false

C. 0 D. 1

E. 2

QUESTION 18

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

A. 0 B. 1

C. 2 D. 3

E. 4

```
Map< Integer, String > map;
map = new HashMap< Integer, String >();
map.put(7, "Spades");
map.put(3, "Clubs");
map.put(7, "Diamonds");
map.put(3, "Hearts");
out.print(map.containsKey(2));    //1
out.print(map.entrySet().remove(7));//2
out.print(map.keySet().size());   //3
```

QUESTION 19

What is output by the code to the right (*indicate a space)?

A. 415*30(4142)(3)

B. 415*30(-4142)(-3)

C. (415)(30)(4142)(3)

D. 415*30(41(3)

E. (415)(30)(-4142)(-3)

```
int[] value = {415,30,-4142,-3};
for(int x : value)
  out.printf("%(3d",x);
out.println();
```

QUESTION 20

What is output by the code marked //1 with a call of mat(6)?

A. 6 B. 0 C. 12 D. 5 E. 8

QUESTION 21

What is output by the code marked //2 with a call of mat(8)?

A. 5 B. 3 C. 12 D. 0 E. 8

```
public static void mat(int r){
   int[][] m = new int[r][0];
   for(int c=1; c<=r; c+=3)
      m[c] = new int [c];
   out.println(m.length);     //1
   out.println(m[2].length);  //2
}
```

QUESTION 22

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

A. `true` B. `false` C. `0` D. `1.5`

E. There is no output due to syntax error.

QUESTION 23

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

A. `true` B. `false` C. `3` D. `1`

E. There is no output due to syntax error.

```
ArrayList <Object> m;
m = new ArrayList <Object>();
m.add(new Double("1.5"));
m.add(new Integer("3"));
m.add(new String("One"));
out.println(m.contains("1.5"));//1
out.println(m.contains(3));    //2
```

QUESTION 24

What is the output if **<*1>** reads: `x.size()`

A. `true` B. `false` C. `19` D. `12.1` E. `14`

QUESTION 25

What is the output if **<*1>** reads: `x.peek()`

A. `true` B. `false` C. `19` D. `12.1` E. `14`

QUESTION 26

What is the output if **<*1>** reads: `x.pop()`

A. `true` B. `false` C. `19` D. `12.1` E. `14`

```
Stack <Double> x;
x = new Stack<Double>();
Double i ;
for(i = 3.1; i < 12.3; i+=.5)
 x.push(i);
System.out.println( <*1>);
```

QUESTION 27

What is output by the code to the right ?

A. `true false true`

B. `true true true`

C. `false false true`

D. `true false false`

E. `false false false`

```
String d1 = new String("3.7");
String d2 = d1;
String d3 = "3.7";
out.print((d1 == d1) + " ");
out.print((d2 == d3) + " ");
out.println(d1.equals(d3));
```

QUESTION 28

What is output by the code to the right ?

A. `43` B. `51` C. `40`

D. `37` E. `36`

```
int x = (11 + 011 + 0x11);
System.out.println(x);
```

QUESTION 29

What is output by the code to the right ?

A. `bzcydxewfvgu`

B. `abcdefghijkl`

C. `nopqrstuvwxy`

D. `anbocpdqerf`

E. `azbycxdwevfu`

```
String s = "abcdefghijklm";
String t = "nopqrstuvwxyz";
String h="";
int x = t.length();
for (int i = 1; i<7; i++){
   h+=s.substring(i,i+1);
   h+=t.substring(x-i,x-i+1);
}
out.println(h);
```

QUESTION 30

What is returned by the method call `curve(8)` ?

A. `0` B. `60` C. `80` D. `384` E. `880`

QUESTION 31

What is returned by the method call `curve(11)` ?

A. `0` B. `60` C. `80` D. `384` E. `880`

```
public static int curve(int x)
{
  if(x<0)
    return 1;
  else
    return curve(x-3) * x;
}
```

QUESTION 32

What is output by the code to the right?

A. `2` B. `35`

C. `0` D. `1`

E. `3`

QUESTION 33

What would the array contain after the code to the right is done?

A. `[1, 0, 2, 2, 3, 0]`

B. `[1, 24, 16, 30, 35, 3]`

C. `[1, 24, 2, 30, 0, 3]`

D. `[1, 24, 2, 3, 1, 1]`

E. `[1, 0, 2, 3, 1, 1]`

```
int x[] = {1,24,16,30,35,3};
int i = 1;
int count = 0;
do{
  int j = 5;
  while(j > i)
  {
     count+=x[j];
     count%=j;
     j--;
  }
  x[i] = count;
  i++;
}while(i<6);
out.println(x[4]);
```

QUESTION 34

What is the value of `a[3].length`?

A. `4` B. `5`

C. `7` D. `15`

E. `35`

QUESTION 35

How many times will the code marked with `//1` be invoked?

A. `20` B. `80`

C. `24` D. `60`

E. `72`

QUESTION 36

How many ***non*** zero elements does matrix `a` contain?

A. `0` B. `24`

C. `30` D. `40`

E. `49`

```
int i, j, k;
int [][] a;
a = new int[7][7];
for(i=1; i<a.length; i++)
  for(j=1; j<a[2].length; j++)
    for(k=3; k>1; k--)
      a[i][i]= a[i][j] * a[j][i]; //1
```

QUESTION 37

What is output by the code to the right ?

A. `1 5 9 13 17 21 25 29`

B. `0 1 2`

C. `29 25 21 17 13 9 5 1`

D. `3 2 1`

E. There is no output due to syntax error.

```
Set <Integer> a ;
a= new TreeSet<Integer>();
for(int x=1;x<30;x+=4){
   a.add(x % 3);
}
for(int h: a ){
   System.out.print(h+" ");
}
```

QUESTION 38

What is the value of `a.size()` for the code to the right ?

A. `1` B. `2` C. `3` D. `8` E. `30`

QUESTION 39

What would print out after the running the code below with the code to the right?

```
int[] list = {34, 12, 21, 2, 25};
int x = mys(list, 5, 2);
out.println(x);
```

A. `2`

B. `-50`

C. `-52`

D. `-2`

E. `52`

```
public static int mys(
                int[] x, int a, int b)
{
  int temp = 0;
  for(int i=0; i<x.length; i++)
     if((x[i]%a)%b==0)
        temp+=x[i];
     else
        temp-=x[i];
  return temp;
}
```

QUESTION 40

What would print out after the running the code below with the code to the right?

```
int[] list = {34, 12, 21, 2, 25};
int x = mys(list, 6, 15);
out.println(x);
```

A. `-28`

B. `28`

C. `70`

D. `-70`

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