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 10_6 plus 10_7 ?

A. 12_7 B. 1101_2 C. 1010_2 D. 12_6 E. 11_{13}

QUESTION 2

What is output by the code to the right?

A. `7.5` B. `14.6` C. `14.0` D. `15.0`

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

```
double a = 7.5;
a = a * (int)2;
System.out.println(a);
```

QUESTION 3

What is output by the code to the right?

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

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

```
int b = (int)Math.floor( 10 / 2.2 );
b = b % 3;
System.out.println(b);
```

QUESTION 4

What is output by the code to the right?

A. `171411` B. `17`

C. `141185` D. `1714118`

E. `14118`

```
for(int c=17; c>7; c=c-3)
  System.out.print(c);
```

QUESTION 5

What is output by the code to the right?

A. `0` B. `-1`

C. `true` D. `false`

E. `no`

```
String d = "52 cards in the deck";
System.out.print(d.endsWith("deck"));
```

QUESTION 6

What is output by the code to the right?

A. `11.0` B. `20.0`

C. `12.0` D. `10.0`

E. `22.0`

```
double[] ray = {11,9,2,8,4};
System.out.println(ray[1]+ray[2]);
```

QUESTION 7

What is output by the code to the right?

A. `yes` B. `no`

C. `maybe` D. `true`

E. `false`

```
boolean ax = false;
boolean bx = !ax;
bx = !ax ^ bx;
System.out.println( bx );
```

QUESTION 8

What is output by the code to the right?

A. 3

B. 03

C. 23

D. 012

E. 13

```
int var = 0;
if( var > 0 )
  System.out.print(0);
else
  if( var < 0 )
    System.out.print(1);
  else
    System.out.print(2);
System.out.print(3);
```

QUESTION 9

What is output by the code to the right?

A. 7 B. 9

C. 0 D. 11

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

```
public class Rocket{
   public int num = 11;
   public Rocket(int n){
      num=n;
   }
   {
     num = 7;
   }
}

//////////////////////////////////////////
//client code
Rocket nasa = new Rocket( 9 );
System.out.println( nasa.num );
```

QUESTION 10

What is output by the code to the right?

A. 11 B. 9

C. 13 D. 18

E. 17

```
System.out.println(10 | 17 & 9);
```

QUESTION 11

What is output by the code to the right?

A. 7 B. 7.0

C. 8.0 D. 8

E. 7.9

```
System.out.println(Math.sqrt(49));
```

QUESTION 12

What is output by the code to the right?

A. 102.0 B. F

C. 102 D. f

E. e

```
System.out.printf("%c\n",204/2);
```

QUESTION 13

What is output by the code to the right?

A. 8 B. 0 C. 6 D. 9 E. 7

```
int[][] m = new int[3][3];
m[0] = new int[]{1,2,3,4,5,6};
m[1]= m[0];
m[1][2] = 7;
m[0][3] = 8;
System.out.println( m[0][2] );
```

QUESTION 14

What is output by the code to the right?

A. 121 B. 117 C. 94 D. 111 E. 100

```
int x =1;
for(int i=1; i<30; i=i+4){
   if(i%2==0)
      x -= i;
   x += i;
}
System.out.println( x );
```

QUESTION 15

What is output by the code to the right?

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

```
String y = "it is funny";
System.out.print( y.length() );
```

QUESTION 16

What is output by the code to the right?

A. link
B. zelda
C. linka
D. link\zelda
E. There is no output due to a syntax error.

```
System.out.print("link\\zelda");
```

QUESTION 17

What is output by the code to the right?

A. 1.4
B. 6.5
C. 1.3
D. 1.0
E. 2.0

```
System.out.println(6.5 % 5.1);
```

QUESTION 18

What is output by the code to the right?

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

```
boolean k = false, m = true;
System.out.println(k | (m && !k));
```

QUESTION 19

What is output by the code to the right?

A. [5, 6, 7, 8, 9, 10, 1, 2, 3, 4]
B. [3, 4, 5, 6, 7, 8, 9, 10, 1, 2]
C. [2, 3, 4, 5, 6, 7, 8, 9, 10, 1]
D. [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
E. There is no output due to a runtime error.

```
Integer[] z = {1,2,3,4,5,6,7,8,9,10};
List iList = Arrays.asList(z);
ArrayList<Integer> n;
n = new ArrayList<Integer>(iList);

Collections.rotate(n, 3);
Collections.rotate(n, -5);
System.out.println(n);
```

QUESTION 20

What is output by the code to the right?

A. 9.0 B. 10.0 C. 11.0 D. 12.0 E. 13.0

```
double[] dr = {1.0,6.7,8,9.1};
double dbl = dr.length * 3;
System.out.println(dbl);
```

QUESTION 21

What is output by the code to the right?

A. 21 B. 5

C. 15 D. 7

E. 11

```
long big = 50L;
int count = 0;
do{
  if(big==25)
    break;
  big -= count;
  count++;
}while(big > 0);
System.out.println(count);
```

QUESTION 22

What is returned by the method call `what(new int[]{10,60,45,-5,50} )` ?

A. 9 B. 20 C. 14 D. 17 E. 15

QUESTION 23

What is returned by the method call `what(new int[]{0,-2,20,30,15,5,10} )` ?

A. 34 B. 33 C. 35 D. 28 E. 29

```
public static int what(int[] x)
{
  int w = 0;
  for(int it : x)
  {
    if( it < 50 )
      w+=3;
    if( it < 25 )
      w+=2;
    if( it < 0 )
      w+=1;
  }
  return w;
}
```

QUESTION 24

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

A. 9

B. 8

C. 5

D. 3

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

QUESTION 25

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

A. 9

B. 8

C. 5

D. 3

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

QUESTION 26

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

A. 9

B. 8

C. 5

D. 3

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

```
public class It{
   private int num;
   public It(int n){  setNum(n);  }
   public void setNum(int n){
      num=n;
   }
   public int getNum(){  return num;  }
}

public class FunHouse{
   public static void up(It a, It b){
      a=b;
   }
   public static void go(It a, It b){
      b.setNum(3);
      b=a;
      b.setNum(8);
   }
}

//////////////////////////////////////////
//client code
It one = new It(9);
It two = new It(5);

out.println( one.getNum() );    //1
FunHouse.up( one, two );
out.println( one.getNum() );    //2
FunHouse.go( one, two );
out.println( one.getNum() );    //3
```

QUESTION 27

Which of the following could replace **<*1>** in the code to the right, allowing all code to continue to execute without error?

A. `ArrayList`
B. `LinkedList`
C. `Stack`
D. A and B only
E. A, B, and C

```
<*1> <Integer> ug;
ug = new <*1><Integer>();

for(int i=0; i<20; i+=1)
   ug.add(0,i);

for(int i=0; i<ug.size(); i++)
{
   if( ug.get(i)%2!=0 )
      ug.remove(0);
}
out.println( ug.size() );   //1
```

QUESTION 28

Assuming that **<*1>** is filled correctly, what is output by the line marked `//1` in the code to the right?

A. `11`
B. `20`
C. `9`
D. `10`
E. `19`

QUESTION 29

What is returned by the method call `wow(12)` ?

A. `37`
B. `29`
C. `50`
D. `24`
E. `43`

```
public static int wow(int x)
{
  if(x>0)
    return x + wow(x-2);
  else
    return 1;
}
```

QUESTION 30

What is returned by the method call `wow(7)` ?

A. `17`
B. `19`
C. `11`
D. `21`
E. `15`

QUESTION 31

What is output by the code to the right?

A. `31` B. `43` C. `38` D. `34` E. `44`

```
System.out.println(0x17 + 017);
```

QUESTION 32

What type of tree traversal is shown by the code to the right?

A. in-order traversal
B. post-order traversal
C. pre-order traversal
D. reverse-order traversal
E. level-order traversal

```
public void print(TreeNode tree)
{
   if(tree != null)
   {
      print(tree.left);
      out.println(tree.value);
      print(tree.right);
  }
}
```

QUESTION 33

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

A. `17` B. `-8` C. `11` D. `3` E. `7`

QUESTION 34

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

A. `17` B. `-8` C. `11` D. `3` E. `7`

QUESTION 35

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

A. `fat`

B. `cat`

C. `hat`

D. `bat`

E. `sat`

```
Map<String, Integer> map;
map = new TreeMap<String, Integer>();
map.put("bat", 11);
map.put("fat", 6);
map.put("sat", 3);
map.put("cat", 23);
map.put("sat", -8);
map.put("bat", 17);
map.put("sat", 7);


out.println(map.get("bat"));     //1
out.println(map.get("sat"));     //2

Collection<String> vals = map.keySet();
Iterator<String> it = vals.iterator();
it.next();
out.println(it.next());          //3
```

QUESTION 36

Which of the following replaces **`<*1>`** in the code to the right so that method `test` will return the ***smallest*** value in `ray`?

A. `who=x;`

B. `x=who;`

C. `x=i;`

D. `i=x;`

E. `who=ray[i];`

```
public class What
{
  public static int test(int[] ray)
  {
    int who = ray[ray.length-1];
    for(int i=ray.length-2; i>=0; i--)
    {
      int x = ray[i];
      if(x<who)
        <*1>
    }
    return who;
  }
}

//////////////////////////////////////////
//client code
int[] stuff = {9,11,-12,21,-24,80,33,71};
out.println(What.test(stuff));    //1
```

QUESTION 37

Assuming that **`<*1>`** is filled correctly, what is output by the line marked `//1` in the client code to the right?

A. `-12` B. `-24` C. `71` D. `9` E. `80`

QUESTION 38

Assume that method `superSort(Object[] objs)` is $O(N^2)$ where N = `obj.length`. When method `superSort` is passed an Object array of length 10000 it takes 0.05 seconds for method `superSort` to complete. If method `superSort` is passed an Object array of length 5000, how many seconds would it take `superSort` to complete?

A. 0.010

B. 0.25

C. 0.05

D. 0.20

E. 0.0125

QUESTION 39

Which of the following could replace **<*1>** in the code to the right so that `tally` would increase by one each time the if statement was found true?

A. `tally = new Integer(tally.intValue()+1);`

B. `tally += 1;`

C. `tally = tally++;`

D. A and B only

E. A, B, and C

QUESTION 40

Assuming that **<*1>** is filled correctly, what is output by the line marked `//1` in the client code to the right?

A. `5`

B. `1`

C. `4`

D. `7`

E. `3`

```
String xx =
  "whootwhootwhootwhootwhootwhootwhoot";

xx=xx.replaceAll("oo","");

String[] list = xx.split("tw");

Integer tally = new Integer(0);

for(String that : list)
  if(that.matches(".*h.*"))
    <*1>

out.println(tally);       //1
```