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 1010_2 times 42_7 ?

A. 270_{10} B. 280_{10} C. 330_{10} D. 300_{10} E. 308_{10}

QUESTION 2

What is output by the code to the right?

A. `1.0 5.0` B. `5.0 2.0`
C. `10.0 3.0` D. `3.0 10.0`
E. `10.0 2.0`

```
double b = 15 % 6;
double a = --b * 5;
System.out.println(a+" "+b);
```

QUESTION 3

What is output by the code to the right?

A. `-2.0` B. `-1.0` C. `2.0` D. `0.0` E. `1.0`

```
Double c = Math.pow(2,5);
c /= Math.pow(4,2);
System.out.println(c);
```

QUESTION 4

What is output by the code to the right?

A. `50` B. `44` C. `92` D. `94` E. `46`

```
int k = 0;
for(k = 1; k < 50; k+=2)
   k *= 2;
System.out.println(k);
```

QUESTION 5

Assuming `'*'` indicates a space, what is output by the code to the right?

A. `here` B. `her` C. `ther`
D. `there` E. `*ther`

```
String q;
q = "Do or do not, there is no try";
q = q.substring(q.length()/2,18);
System.out.println(q);
```

QUESTION 6

What is output by the code to the right?

A. `5` B. `4` C. `7` D. `2`
E. There is no output due to a runtime error.

```
String[] t = {"Nevadans",
    "Cyclops", "Felines", "Horses"};
out.print(t[t.length - 2].length());
```

QUESTION 7

What is output by the code to the right?

A. `true_true` B. `true_true_false`
C. `false_true` D. `true_false`
E. `false_false`

```
boolean a = true;
boolean b = !a;
out.print((a && b) + "_");
out.print(!a || b && !b);
```

QUESTION 8

What is the output by the code to the right?

A. `Horses Winny!`
B. `Nevadans Jackpot!`
C. `Felines Purrfect!`
D. `Cys Win!`
E. There is no output due to a runtime error.

```
boolean cwin = true;
boolean hwin = false;
if( cwin && !hwin || cwin && hwin )
   out.print("Cys Win! ");
else if( hwin )
   out.print("Horses Winny!");
else
   out.print("Felines Purrfect!");
```

QUESTION 9

What is the output by the code to the right?

A. 7 B. -7 C. 1 D. 0 E. 6

```
int x = 7;
if( x < 7 )
   System.out.println(x);
else
   System.out.println(x - 7);
```

QUESTION 10

Assume `player` is a reference to an Object of type `Stats`, which of the following lines of codes would ***NOT*** be valid?

A. `player.atbats = 22;`

B. `player.atBat("SINGLE");`

C. `player = new Stats(5, 10);`

D. `System.out.println(player);`

E. more than one answer

```
public class Stats{

   private int hits, atbats;

   public Stats(int h, int ab){
      hits = h;
      atbats = ab;
   }

   public void atBat(String result){
      if(result.equals("HIT"))
         hits++;
      if(result.equals("WALK"))
         atbats--;
      atbats++;
   }
}
```

QUESTION 11

What is the output by the code to the right?

A. 5.0 B. 0.0 C. 4.0 D. -5.0 E. -4.0

```
double x;
x = Math.abs(Math.floor(-4.2));
out.println(x);
```

QUESTION 12

Assuming `'*'` indicates a space, what is output by the code to the right?

A. `24.612*****` B. `24.7*****12`

C. `-24.712***` D. `-24.61***12`

E. `-24.612****`

```
out.printf("%-5.1f %5d",24.65,12);
```

QUESTION 13

What is the output by the code to the right?

A.
```
Hello
"I love you"
The Doors
```

B.
```
Hello
   "I love you"

      The Doors
```

C.
```
Hello
I love you


The Doors
```

D.
```
Hello\n I love you
   The Doors
```

E.
```
Hello\n
I love you
The Doors
```

```
out.println("Hello\n\"I love you\"");
out.println("The Doors");
```

QUESTION 14

What is the output by the code to the right?

A. 15 B. 48 C. out of bounds error

D. 17 E. 18

```
int[][] m = {{4,2,3}, {6,5,4},
             {7,8,9}};
int c = 0;
for(int i = 0; i < m.length; i++)
   c += m[i][m.length-i-1];
System.out.println(c);
```

QUESTION 15

What is the output by the code to the right?

A. 25.642.113.78.9612.4 B. 25.642.18.96

C. 1020 D. 13.712.4 E. xxxxx

```
Double[] scores = {25.6, 42.1, 13.7,
                   8.96, 12.4};
for(Double x : scores)
   if(x > 10 && x < 20)
      System.out.print(x);
```

QUESTION 16

What is the output by the code to the right?

A. jhbgde B. oyoo

C. johnnbgoode D. hnnyg

E. jhnnbgde

```
String y = "johnnybgoode";
String s = "";
for(int i = 0; i < y.length(); i++)
   if(y.charAt(i) < 'o')
      s += y.charAt(i);
System.out.println(s);
```

QUESTION 17

What is the output by the code to the right?

A. 101 B. 13 C. 110 D. 7 E. 5

```
System.out.println(7 | 6 & 13);
```

QUESTION 18

Assume **<*1>** is code that places random boolean values into the boolean variables. What will the variable result hold after the code is run?

A. true

B. the same value as isCool

C. the same value as isWarm

D. false

E. The output cannot be determined until runtime.

```
boolean isCool, isHot, isWarm;
boolean result;
<*1>
result = isWarm && (isHot || isCool);
```

QUESTION 19

What is the output by the code to the right?

A. [-6.1, 2.0, 2.2, 4.2, 4.6]

B. [2.0, 2.2, -6.1]

C. [4.6, 2.0, 4.2, 2.2, -6.1]

D. [4.6, 4.2, -6.1]

E. [4.6, 4.2, 2.0, -6.1, 2.2]

```
ArrayList<Double> list;
list = new ArrayList<Double>();
list.add(4.6);
list.add(1,4.2);
list.set(1,2.0);
list.add(2,-6.1);
list.remove(0);
list.add(1,2.2);
out.print(list);
```

QUESTION 20

How many Xs are printed out by the code to the right?

A. 15 B. 17 C. 18 D. 14 E. 16

```
for(int x = 1; x < 100; x += 2)
   if(x % 6 == 3)
      out.print("X");
```

QUESTION 21

Assuming that `list` and `list2` are both instantiated and that `list2` is empty and that `list` has the following values

15	-7	4	-1	-19	27

What is the output by the code to the right?

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

B. `6`

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

D. `46`

E. `3`

```
while(!list.isEmpty())
{
   while(list.get(0) > 0)
   {
      list2.add(list.get(0));
      list.set(0, list.get(0)-1);
   }
   list.remove(0);
}
System.out.println(list2.size());
```

QUESTION 22

What is returned by the method call `stockOption(8000)`?

A. `sell` B. `more info`

C. `buy` D. `divest`

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

QUESTION 23

What is returned by the method call `stockOption(4000)`?

A. `sell` B. `more info`

C. `buy` D. `divest`

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

```
public String stockOption(double s)
{
   String x;
   if(s < 2000)
      x = "buy";
   else if(s > 4000 && s < 6000)
      x = "more info";
   else if(s >= 6000)
      x = "sell";
   else
      x = "divest";
   return x;
}
```

QUESTION 24

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

A. `42.3` B. `20.6` C. `Loren` D. `15.5` E. `Bill`

QUESTION 25

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

A. `20.6` B. `42.3` C. `15.5` D. `Loren` E. `Bill`

QUESTION 26

Which of the following lines of code could replace **<*1>** to correctly find the average of both scores which is `28.9`?

A. `a.score + b.score / 2;`

B. `(a.score + b.score) / 2;`

C. `(a.getScore() + b.getScore()) / 2;`

D. A and B only

E. A, B, and C

```
public class Appraise
{
   public double score;
   public String name;

   public Appraise(String x, double y)
   {
      name = x;
      score = y;
   }

   public double getScore()
   {
      return score;
   }

   public String getName()
   {
      return name;
   }
}

public class Second extends Appraise
{
   public double score;

   public Second(String x, double y)
   {
      super(x,y);
   }

   public void setScore(double x)
   {
      score = x;
   }
}

////////////////////////////////////
//client code
Appraise a;
a = new Appraise("Loren",15.50);
Second b;
b = new Second("Bill", 20.6);
b.setScore(42.3);


out.println(a.getScore());            //1
out.println(b.getScore());            //2



double avg = <*1>
out.println( avg );
```

QUESTION 27

Which of the following correctly replaces **<*1>** in the code to the right to create a loop to iterate over list `x`?

A. `for(Integer i : x)`

B. `for(int i = 0; i < x.size() - 1; i++)`

C. `for(int i = 0; i < x.size(); i++)`

D. `for(int i = 0; i <= x.size() - 1; i++)`

E. more than one of these

QUESTION 28

Assuming blank **<*1>** is filled correctly, what is the output by the code to the right provided that the ArrayList `x` holds `[10, 2, 14, 21, 23, 8, 11]`?

A. `[4, 4, 28, 42, 16, 16, 11]`

B. `[4, 28, 42, 46, 16, 22, 22]`

C. `[20, 4, 28, 42, 46, 16, 22]`

D. `[2, 4, 28, 42, 8, 16, 11]`

E. `[2, 2, 14, 21, 8, 8, 11]`

```
ArrayList<Integer> x;
x = new ArrayList<Integer>();

<*1>
{
   if(x.get(i) > x.get(i+1))
      x.set(i,x.get(i+1));
   else
      x.set(i,x.get(i)*2);
}
System.out.println(x);
```

QUESTION 29

What is returned by the method call `mystery(3,2)`?

A. `15` B. `8` C. `5` D. `7` E. `10`

QUESTION 30

What is returned by the method call `mystery(5,7)`?

A. `17` B. `21` C. `24` D. `12` E. `29`

```
public int mystery(int a, int b)
{
   if(a - b > 0)
      return mystery(b, a);
   if(a < 0)
      return 5;
   return mystery(a-3, b-2) + a + b;
}
```

QUESTION 31

What is $1001_2 + 101_2 + 10_2 = ?$

A. 20_8

B. A_{16}

C. 1000000_2

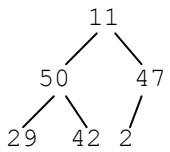
D. 32_{10}

E. 1010_{10}

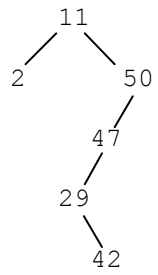
QUESTION 32

How would a max heap tree look for the following numbers: 11, 50, 47, 29, 42, 2 ?

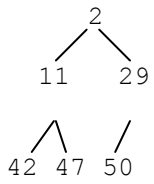
A.



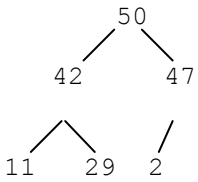
B.



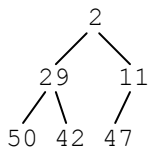
C.



D.



E.



QUESTION 33

Which of the following correctly replaces **<*1>** in the code to the right?

A. `new TreeSet<String>();`

B. `new Set<String>();`

C. `new HashSet<String>();`

D. A and C only

E. A, B, and C only

```
SortedSet<String> x = <*1>
x.add("Dollars");
x.add("Planes");
x.add("Dollars");
x.add("Rebels");
x.add("Planes");
x.add("dollars");
x.add("Whales");
System.out.println(x);
```

QUESTION 34

Assuming blank **<*1>** is filled correctly, what is the output by the code to the right?

A. `[Dollars, Dollars, Planes, Planes, Rebels, Whales, rebels]`

B. `[rebels, Dollars, Planes, Rebels, Whales]`

C. `[Dollars, Planes, Rebels, rebels, Whales]`

D. `[Dollars, Planes, Dollars, Rebels, Planes, rebels, Whales]`

E. `[Dollars, Planes, Rebels, Whales, dollars]`

QUESTION 35

Which of the following correctly replaces **<*1>** in the code to the right?

A. `<Set<Integer>, String>`

B. `<String, Set<Integer>>`

C. `<Integer, String>`

D. `<String, Integer>`

E. `<String, Character>`

```
Map <*1> x = new TreeMap <*1>();
x.put("Grover",46);
x.put("Oscar", 37);
x.put("Grover",23);
x.put("Burt",7);
x.put("Oscar",102);
```

QUESTION 36

Which of the following correctly replaces **<*1>** in the code to the right?

A. `new ArrayList<Double>();`

B. `new Queue<Double>();`

C. `new HashSet<Double>();`

D. `new LinkedList<Double>();`

E. more than one of these

QUESTION 37

Assuming blank **<*1>** is filled correctly, what is output by the code to the right?

A. `[23.4, 14.2, 2.9, 5.0]`

B. `[5.0, 17.4, 14.2, -9.0, 2.9]`

C. `[5.0, 2.9, 14.2, 23.4]`

D. `[2.9, -9.0, 14.2, 17.4, 5.]`

E. `[-9.0, 14.2, 17.4, 5.0]`

```
Queue<Double> q = <*1>
q.add(23.4);
q.add(14.2);
q.add(2.9);
q.add(new Double(-9));
q.remove();
q.add(q.remove());
q.add(17.4);
q.remove();
q.add(5.0);
System.out.println(q);
```

QUESTION 38

What is output by the code to the right?

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

```
System.out.println(29 >>> 3);
```

QUESTION 39

What is output by the code to the right?

A. `null` B. `game` C. `of` D. `c` E. `a`

```
String s = "each game of chess";
String[] list = s.split("\\s");
System.out.println(list[2]);
```

QUESTION 40

Which value of String `s` would cause the code to the right to return `true`?

A. `Opies`

B. `Toledo`

C. `Euclids`

D. A and B

E. A and C

```
s.matches("[^AEU].+[a-z&&[str]]")
```