Assignment 1-Answer

RDC 9/26/2017

Name:_____ Class:_____

1. Write the outputs of these expressions on the line below.

(1)
```
System.out.print("Hot");
System.out.println("dog");
```

_Hotdog_____

(2)
```
System.out.println("Hot");
System.out.println("dog");
```

Hot
dog_____

(3)
```
System.out.println(7 + 3);
```

10_____

(4)
```
System.out.println(7 == 2 + 5);
```

true_____

(B) **2. Which of the following pairs of declarations will cause an error message?**

[a]
```
double x = 14.7;
int y = x;
```

[b]
```
double x = 14.7;
int y = (int) x;
```

[c]
```
int x = 14;
double y = x;
```

(A) None
(B) [a] only
(C) [b] only
(D) [c] only
(E) [a] and [c] only

3. Complete the following binary operations:

(1) 101 - 11 = __10_____

(2) 10110 + 1101 = __100011_____

(E) **4. What value is stored in `result` if**

```
int result = 13 - 3 * 6 / 4 % 3;
```

(A) -5
(B) 0
(C) 13
(D) -1
(E) 12

(C) **5. Suppose that addition and subtraction had higher precedence than multiplication and division. Then the expression**

```
2 + 3 * 12 / 7 - 4 + 8
```

would evaluate to which of the following?

(A) -5
(B) 0
(C) 13
(D) -1
(E) 12

6. Write the outputs of these expressions on the line below.

(1)
```
for (i = 1; i < 5; i++)
    System.out.print(i + " ");
```
__1 2 3 4_____

(2)
```
for (k = 20; k >= 15; k- -)
    System.out.print(k + " ");
```
__20 19 18 17 16 15_____

(3)
```
for (int j = 1; j <= 0; j++)
    System.out.print(j + " ");
```
_____

(4)
```
int i = 1, mult3 = 3;
 while (mult3 < 20)
  {
      System.out.print(mult3 + " ");
      i++;
      mult3 *= i;
  }
```
___3 6 18_____

(5)
```
for (int i = 1; i <= 6; i++)
    {
      for (int j = 1; j <= i; j++)
         System.out.print("+");
      for (int j = 1; j <= 6 - i; j++)
         System.out.print("*");
      System.out.println();
    }
```
+*****
++****
+++***
++++**
+++++*
++++++_____

Bonus Questions

(D) **1. Consider this code segment:**

```
int x = 10, y = 0;
while (x > 5)
{
      y = 3;
      while (y < x)
      {
            y *= 2;
            if (y % x  == 1)
               y += x;
      }
      x -= 3;
}
System.out.println(x + " " + y);
```

What will be the output after execution of this code segment?

(A) 1 6
(B) 7 12
(C) -3 12
(D) 4 12
(E) -3 6

(D) **2. Consider this program segment:**

```
int newNum = 0, temp;
int num = k;                              //k is some predefined integer
value >= 0
while (num > 10)
{
      temp = num % 10;
      num /= 10;
      newNum = newNum * 10 + temp;
}
System.out.print(newNum);
```

Which is a true statement about the segment?

[a] If 100 <= `num` <= 1000 initially, the final value of `newNum` must be in the range 10 <= `newNum` <= 100.

[b] There is no initial value of `num` that will cause an infinite while loop.

[c] If `num` <= 10 initially, `newNum` will have a value of 0.

(A) [a] only
(B) [b] only
(C) [c] only
(D) [b] and [c] only
(E) [a], [b] and [c]