Recursion

1. What is returned by the method call: **doSomething(6)** ?

```
public int doSomething(int n)
{
    if(n == 0)
      return 0;
    else
      return 1 + doSomething(n - 1);
}
```

a. 0

b. 6

c. 12

d. 36

e. 21

2. What is returned by the method call: **doSomething(6)** ?

```
public int doSomething(int n)
{
    if(n == 0)
      return 0;
    else
      return n + doSomething(n - 1);
}
```

a. 0
b. 6
c. 12
d. 36
e. 21

3. Consider the following method.

```
public int whoKnows(int n)
{
    if(n == 0 || n == 1)
        return 0;
    else
        return n + whoKnows(n - 1) + whoKnows(n - 2);
}
```

What value does **whoKnows(6)** return?

a. 6
b. 15
c. 20
d. 38
e. 120

4. Consider the following method.

```
public int crazy(int a, int b)
{
    if(a < b)
        return a;
    else
        return b + crazy(a-1, b+1);
}
```

What value does **crazy(4, 2)** return?

a. 8   d. 3

b. 7   e. 2

c. 4

5. Consider the following method.

```java
public void surprise(int k, String s)
{
    if(k < s.length())
    {
        System.out.print(s.substring(k, k+1));
        surprise(k + 1, s);
        System.out.print(s.substring(k, k+1));
    }
}
```

Which of the following is output as a result of the call **surprise(0, "123456789").**

a.   987654321234566789

b.   123456789987654321

c.   12345678987654321

d. 0123456789876543210

e. 123456789000000000

6. Consider the following method.

```
public int doesWhat(int n)
{
    if(n <= 1)
      return 1;
    else if(n % 2 == 0)
      return n - doesWhat(n - 1);
    else
      return n + doesWhat(n - 1);
}
```

What value does **doesWhat(7)** return?

a. 0

b. 1

c. 4

d. 5

e. 8