

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)** ?

```
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}
```

- 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
- b. **7**
- c. 4
- d. 3
- e. 2

5. Consider the following method.

```
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. 1234567890000000000

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**