1. Write a recursive function to compute $a^b$ for integers $a$ and $b$. For the recursive step use the following equality $a^b = a^{b-1} \times a$ and $a^0 = 1$.

2. What does the following recursive function do?

```c
int mystery(int a, int b)
{
    if (b==1)
        return (a);
    else
        return (a + mystery(a, b - 1));
}
```