1) (5 pts) DSN (Recursive Coding)

Write a **<u>recursive function</u>** below so that it returns the maximum integer k such that $base^k \leq ans$. For example if base is 3 and ans is 123, then 4 should be returned since $3^4 = 81$ and $3^5 = 243$. The restricted bounds below are to ensure that integer overflow isn't an issue.

```
// Pre-condition: 1 < base <= 1000, 1 <= ans <= 1000000
int maxpowLTE(int base, int ans) {

    // Grading: 1 pt if, 1 pt return.
    if (ans < base)
        return 0;

    // Grading: 3 pts total, 1 pt return 1 +, 1 pt rec call,
    // 1 pt parameters to rec call.
    return 1 + maxpowLTE(base, ans/base);

}
```