

### PROBLEM 3 (10 points possible)

For each of the following expressions, select the order of growth class that best describes it from the following list:  $O(1)$ ,  $O(\log(n))$ ,  $O(n)$ ,  $O(n \log(n))$ ,  $O(n^c)$  or  $O(c^n)$ . Assume  $c$  is some constant.

1.  $0.0000001n + 1000000$

▼

2.  $0.0001n^2 + 20000n - 90000$

▼

3.  $20n + 900 \log(n) + 100000$

▼

4.  $(\log(n))^2 + 5n^7$

▼

5.  $n^{200} - 2n^{30}$

▼

6.  $30n^2 + n \log(n)$

▼


7.  $n \log(n) - 3000n$

▼

8.  $3$

▼

9.  $5^n + n^5 + n + 5$



10.  $n \log(n) + n^2 + n + \log n + 1 + 2^n$

