

# Team Assignment 10

Team Number and Initials \_\_\_\_\_

How would we re-write the following in Big-O notation?

1.  $f_1(n) = 120n + n^2 + 3$

2.  $f_2(n) = 10000n + n$

3.  $f_3(n) = 37\log_2(n)$

4.  $f_4(n) = 2^n + 900n^{10} + 1$

5.  $f_5(n) = 17n\log_2(n) + 4n$

6.  $f_6(n) = n! + 2^n$

What can we say about the complexity class of the following problems?

7.  $\{w \mid w \text{ is of even length}\}$

8.  $\{w \mid w \text{ starts and ends with the same symbol}\}$

9.  $\{w \mid w \text{ is a palindrome}\}$

10.  $\{w \mid w \text{ the length of } w \text{ is odd and the middle symbol is } 0\}$

11.  $\{a^i b^j c^k \mid i + j = k, \text{ and } i, j, k \geq 0\}$

12.  $\{a^i b^j c^k \mid i \times j = k, \text{ and } i, j, k \geq 0\}$