Brandon Lee  
9/18/2014  
COMP2011  
Assignment 1

**Prove: T(n) = 7n5 + 8n4 + log(n) + 1030 is O(n5)**

Proof:

* By Asymptotic upper-bound O-notation, f(n) = O(g(n)) if positive constants c and n0 can be found such that 0 ≤ f(n) ≤ c(g(n))
* Let c = 5, n0 = 1030
* Then 7n5 + 8n4 + log(n) + 1030 ≤ c(n5) for any value n0 ≤ n

Java Source Code:

**public** **class** lab1 {

**public** **static** **void** main(String[] args){

System.***out***.println("\*\*\*\*\*\* \*\* \*\* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\*\*\*\*\*\* \* \* \* \* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\* \* \* \* \* \* \*");

System.***out***.println("\*\*\*\*\*\* \* \* \* \*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}

}