**Question1:**

1. **a)**

|  |  |  |
| --- | --- | --- |
| Express | Dominant Term | Big-O Complexity |
| 28n + 7n^2 | 7n^2 | O(n^2) |
| (log2n)^3 + n(log2n) | nlog2n | nlogn |
| n^3log2n + n(log2n)^3 | n(log2n)^3 | nlogn |
| 2.5n + n^5.3 + 1.7n^7 | 1.3n^7 | n^7 |
| loglogn + logloglogn | loglogn | logn |
| n^2logn + n^3 | n^3 | n^3 |

**b)**

**c)**

- Firstly the input of the code is n

- Secondly we have the first for loop that will run n number of times

- Thirdly we have the second for loop that will run n number of times

- Fourthly we have the third for loop that will run n number of times

- O(n) = n \* n \* n

- O(n) = n^3

**Question2:**

1. We have O(n^2), reason being we have to loop through the babies while at the same time we looping through arrival times and keeping track of the people arriving at the same time so to get the sum of people arriving at the same time