**Assignment 4 – OpenMP**

Qusetion: (Reduce)

Does the plots make sense? Why?  
- The plots gets less speedup and it makes sense as the code for which we have used OpenMP isn’t actually a parallel code and OpenMP is still trying to make it parallel. In the code all the threads tries to write on the global variable (result\_sum in this case). Thus, this becomes an overhead for the thread to get access to the global variable and acquiring locks to write on it. This slows down the speedup as they wait for the other threads to release their access. For all the scheduling types the speed is same because even if we distribute the work among maximum number of threads every iteration has just one line code to do and that too is where the global variable is accessed and it is something which can be read or written by one thread at a time.

Question: (NumInt)

Does the plot make sense? Why  
- As observed form the graphs, as the number of iterations to be computed increases the speedup decreases with the increase in intensity and it makes sense because as the number of iterations are already high, the increased intensity makes each iteration more expensive thus decreasing the speed. As the code for which we are using OpenMP still accesses the global for every iteration if the number of iterations are high and the intensity is low the computations will be quick and thus keeps a good speedup. As from the other graphs it can be observed that as the granularity is less for some number of iterations the overhead of getting for another chunk of data is more and thus it decreases the speed of execution. But when the granularity and intensity are kept balanced (as for the intensity in the middle range) the graphs gives a quite better speedup and is quite constant. This shows that to have a constant speedup a good balance between the intensity and granularity.