David Harkins

Program 2:

1. Speed up: The larger P the faster the computation, it does not scale one to one though. P= 16 is faster than P = 8 but it is not double the speed (this is due to network cost).
2. Efficiency: When P is large the network cost dominates for such a small N as can be seen for p = 16 (this can also be observed on 4 and 8 when N = 128). Once the size of N grows the cost of the network is masked by the increased computation.
3. Network VS computation: As the number of processors grows for a fixed size n computation time is lost due to the increased network cost. To prevent this N should be scaled up with P.