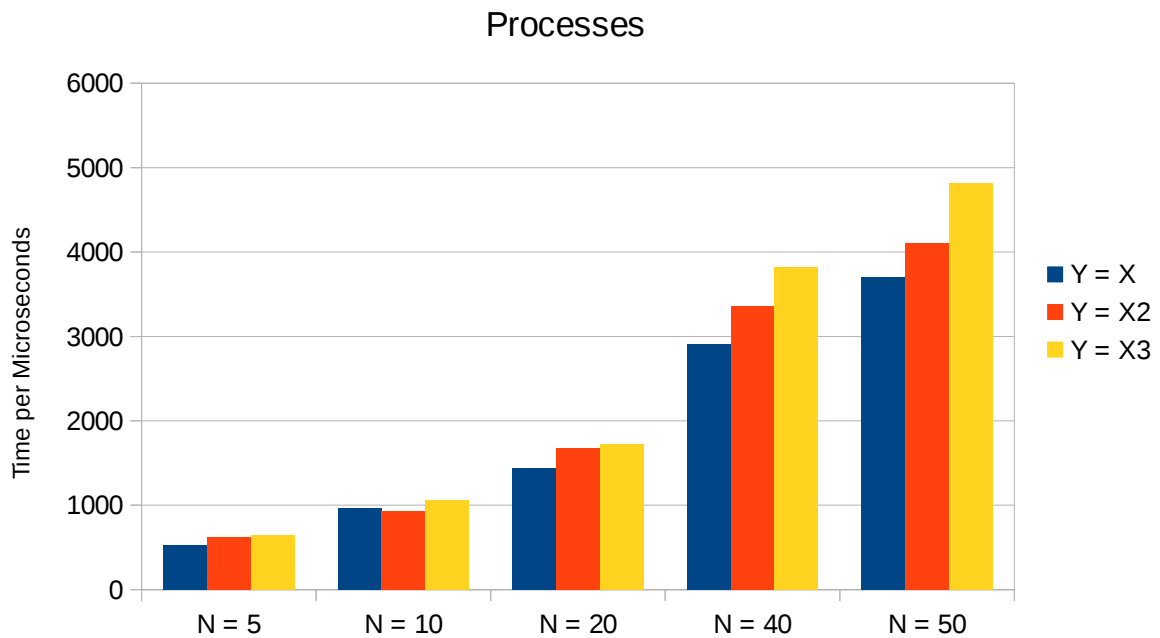


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Section 2

Part A)



Integrals taken from  $X=5$  to  $X=35$  with 1000 subintervals:

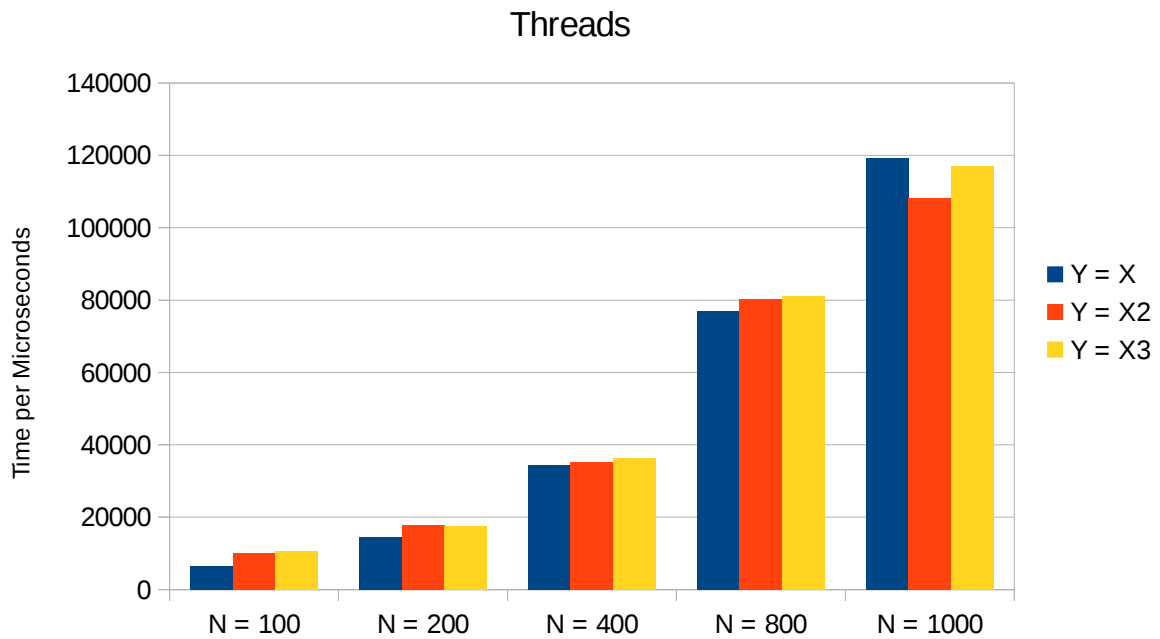
$L = 5$

$U = 35$

$K = 1000$

|        | $Y = X$ | $Y = X^2$ | $Y = X^3$ |
|--------|---------|-----------|-----------|
| N = 5  | 520     | 618       | 650       |
| N = 10 | 964     | 936       | 1055      |
| N = 20 | 1439    | 1679      | 1719      |
| N = 40 | 2907    | 3354      | 3822      |
| N = 50 | 3704    | 4103      | 4816      |

## Part B)



Integrals taken from  $X=5$  to  $X=35$  with 1000 subintervals:

$L = 5$

$U = 35$

$K = 1000$

|          | $Y = X$ | $Y = X^2$ | $Y = X^3$ |
|----------|---------|-----------|-----------|
| N = 100  | 6450    | 10128     | 10770     |
| N = 200  | 14608   | 17893     | 17629     |
| N = 400  | 34469   | 35235     | 36236     |
| N = 800  | 76907   | 80323     | 81251     |
| N = 1000 | 119169  | 108205    | 116934    |

Conclusion: Regardless of the choice of function, the time cost increases, almost doubles, every time the value of  $N$  is doubled. This is consistent across both, threads and processes. This is because when there is a large number of processes or threads, each of them needs to get a slice of CPU time, which leads to lots of context switches and hence a lot of overhead.