README.txt Page 1

```
//
//
         FEDERAL UNIVERSITY OF RIO GRANDE DO NORTE - UFRN
                                                     //
              DIGITAL METROPOLIS INSTITUTE - IMD
//
                                                     //
//
            BACHELOR OF INFORMATION TECHNOLOGY - BTI
//
         SPECIAL TOPICS ON INTERNET OF THINGS "B" - IMD0291
                                                     //
//
// Names: integral.h
                                                     //
//
                                                     //
      report.h
//
                                                     //
       report.pdf
//
       integral-by-trapezoid-rule-serial.cpp
//
       integral-by-trapezoid-rule-parallel.cpp
//
       calculates-serie-parallel-analysis.cpp
       shellscript_start.sh
//
                                                     11
//
       README.txt
                                                     //
// Date: 14/10/2020
                                                     //
// Version: 1.0
//
                                                     //
// Author: P.R.O.Lima
                                                     //
//
                                                     //
// Repository: https://github.com/r4m0nl1m4/integral-by-trapezoid-rule
//
// Software: GNU Compiler Collection (gcc) 9.3.0
                                                     11
//
^{\prime\prime} Description: Approximating the definite integral by trapezoid rule by
                                                     //
// serial and parallel computing.
//
// To execute:
                                                     //
//
    ~$ bash shellscript_start.sh
                                                     //
//
```

```
/*
 * CPU Report
 */
```

model name : Intel(R) Core(TM) i7-4770K CPU @ 3.50GHz vendor\_id : GenuineIntel cpu cores : 4 siblings : 8 cache size : 8192 KB

```
/*
    * Problem Size Report
    */

:10000:10000:10000:10000:10000
:20000:20000:20000:20000:20000
:10000:10000:10000:10000:10000
:20000:20000:20000:20000:20000
:10000:10000:10000:10000:10000
:20000:20000:20000:20000:20000
:10000:10000:10000:10000:10000
:20000:20000:20000:20000:20000
```

```
/*
    * Serie Runtime Report In Seconds
    */

:6.10e-05:5.60e-05:9.90e-05:1.22e-04:4.60e-05
:1.85e-04:2.74e-04:2.11e-04:2.43e-04:1.32e-04
:8.00e-05:1.32e-04:6.00e-05:8.80e-05:4.00e-05
:2.51e-04:1.51e-04:3.16e-04:2.26e-04:1.67e-04
:1.12e-04:1.21e-04:9.90e-05:8.80e-05:1.21e-04
:1.86e-04:1.43e-04:1.50e-04:1.37e-04:1.66e-04
:1.05e-04:8.30e-05:1.05e-04:1.06e-04:1.13e-04
:1.86e-04:1.97e-04:1.54e-04:1.17e-04:1.50e-04
```

```
/*
    * Parallel Runtime Report In Seconds
    */

:3.48e-05:3.43e-05:4.39e-05:4.71e-05:3.69e-05
:6.55e-05:1.29e-04:9.31e-05:5.93e-05:1.17e-04
:2.57e-04:4.83e-05:8.91e-05:3.67e-05:4.68e-05
:3.86e-05:1.27e-04:9.26e-05:8.33e-05:9.07e-05
:1.75e-04:6.45e-05:1.56e-04:4.11e-05:1.08e-04
:7.01e-05:5.20e-05:5.86e-05:1.65e-04:7.03e-05
:1.90e-04:1.72e-04:1.47e-04:1.61e-04:6.83e-05
:1.66e-04:7.40e-05:2.26e-04:6.47e-05:6.13e-05
```

```
/*
  * Speedup Report
  */

:1.75:1.63:2.26:2.59:1.25
:2.82:2.12:2.27:4.10:1.13
:0.31:2.73:0.67:2.40:0.85
:6.50:1.19:3.41:2.71:1.84
:0.64:1.88:0.63:2.14:1.12
:2.65:2.75:2.56:0.83:2.36
:0.55:0.48:0.71:0.66:1.65
:1.12:2.66:0.68:1.81:2.45
```

```
/*
  * Efficiency Report
  */

:0.88:0.81:1.13:1.29:0.62
:1.41:1.06:1.14:2.05:0.56
:0.08:0.68:0.17:0.60:0.21
:1.62:0.30:0.85:0.68:0.46
:0.11:0.31:0.10:0.36:0.19
:0.44:0.46:0.43:0.14:0.39
:0.07:0.06:0.09:0.08:0.21
:0.14:0.33:0.09:0.23:0.31
```

/*  * Parallel Ca	alculation R	eport				
2 Cores CPU -	- Size Probl	em 10000				
Try 1						
Runtime 3.	.48e-05 [s]					
Process 0	Total 2	problemSize 5000	Total 10000	Local 1.458333		
1	2 2	5000	10000	1.208333	2.666667	
Try 2						
Runtime 3.	.43e-05 [s]					
Process 0		problemSize 5000	Total 10000	Local 1.458333	Total 1.458333	
1 		5000	10000		2.666667	
Try 3						
Runtime 4.	.39e-05 [s]					
Process 0	Total 2	problemSize 5000		Local 1.458333	Total 1.458333	
1		5000	10000	1.458333 1.208333	2.666667	
Try 4						
Runtime 4.	.71e-05 [s]					
Process 0	Total 2	problemSize 5000	Total 10000	Local 1.458333		
1 	2 	5000	10000	1.208333		
Try 5						
Runtime 3.	.69e-05 [s]					
Process 0		problemSize 5000	Total 10000	Local 1.458333		
1	2 	5000	10000	1.208333	2.666667	
2 Cores CPU -	- Size Probl	em 20000				
Try 1						
Runtime 6.	.55e-05 [s]					
Process	Total	problemSize	Total	Local	Total	
0 1	2 2	10000 10000	20000 20000	1.458333 1.208333	1.458333 2.666667	
Try 2						
Runtime 1.29e-04 [s]						
Process	Total	problemSize	Total	Local	Total	
0 1	2 2	10000 10000	20000 20000	1.458333 1.208333	1.458333 2.666667	
Try 3						
Runtime 9.	.31e-05 [s]					
Process		problemSize	Total	Local	Total	
0 1	2 2	10000 10000	20000 20000	1.458333 1.208333	1.458333 2.666667	

Try 4				
Runtime 5.93e-05 [s]				
Process Total 0 2 1 2	problemSize 10000 10000	Total 20000 20000	Local 1.458333 1.208333	Total 1.458333 2.666667
Try 5				
Runtime 1.17e-04 [s]				
Process Total 0 2 1 2	-	Total 20000 20000	Local 1.458333 1.208333	Total 1.458333 2.666667
4 Cores CPU - Size Prob	lem 10000			
Try 1				
Runtime 2.57e-04 [s]				
Process Total 0 4 1 4 2 4 3 4	problemSize 2500 2500 2500 2500	Total 10000 10000 10000 10000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 2				
Runtime 4.83e-05 [s]				
Process Total 0 4 1 4 2 4 3 4	-	Total 10000 10000 10000 10000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 3				
Runtime 8.91e-05 [s]				
Process Total 0 4 1 4 2 4 3 4	problemSize 2500 2500 2500 2500	Total 10000 10000 10000 10000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 4				
Runtime 3.67e-05 [s]				
Process Total 0 4 1 4 2 4 3 4	problemSize 2500 2500 2500 2500	Total 10000 10000 10000 10000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 5				
Runtime 4.68e-05 [s]				
Process Total 0 4 1 4 2 4 3 4	problemSize 2500 2500 2500 2500	Total 10000 10000 10000 10000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667

<sup>4</sup> Cores CPU - Size Problem 20000

	-				
Try 1					
Runtime 3.86e	e-05 [s]				
Process 0 1 2 3	Total 4 4 4 4	problemSize 5000 5000 5000 5000	Total 20000 20000 20000 20000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 2					
Runtime 1.27e	e-04 [s]				
Process 0 1 2 3	Total 4 4 4 4	problemSize 5000 5000 5000 5000	Total 20000 20000 20000 20000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 3					
Runtime 9.26e	e-05 [s]				
Process 0 1 2 3	Total 4 4 4 4	problemSize 5000 5000 5000 5000	Total 20000 20000 20000 20000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 4					
Runtime 8.33e	e-05 [s]				
Process 0 1 2 3	Total 4 4 4 4	problemSize 5000 5000 5000 5000	Total 20000 20000 20000 20000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
Try 5					
Runtime 9.07e	e-05 [s]				
Process 0 1 2 3	Total 4 4 4 4	problemSize 5000 5000 5000 5000	Total 20000 20000 20000 20000	Local 0.744792 0.713542 0.651042 0.557292	Total 0.744792 1.458333 2.109375 2.666667
6 Cores CPU - Si	ze Probl	em 10000			
Try 1					
Runtime 1.75e	e-04 [s]				
Process 0 1 2 3 4 5	Total 6 6 6 6 6 6	problemSize 1666 1666 1666 1666 1666	Total 10000 10000 10000 10000 10000	Local 0.498259 0.489010 0.470514 0.442770 0.405777 0.359536	Total 0.498259 0.987269 1.457783 1.900553 2.306330 2.665867
Try 2					
Runtime 6.45e	e-05 [s]				
Process 0 1 2	Total 6 6 6	problemSize 1666 1666 1666	Total 10000 10000 10000	Local 0.498259 0.489010 0.470514	Total 0.498259 0.987269 1.457783

result_report	-parallel-cp	u.txt				Page 4
3 4 5	6 6 6	1666 1666 1666	10000 10000 10000	0.442770 0.405777 0.359536	1.900553 2.306330 2.665867	
Try 3						
Runtime 1	.56e-04 [s]					
Process 0 1 2 3 4 5	Total 6 6 6 6 6	problemSize 1666 1666 1666 1666 1666	Total 10000 10000 10000 10000 10000	Local 0.498259 0.489010 0.470514 0.442770 0.405777 0.359536	Total 0.498259 0.987269 1.457783 1.900553 2.306330 2.665867	
Try 4						
Runtime 4	.11e-05 [s]					
Process 0 1 2 3 4 5	Total 6 6 6 6 6	problemSize 1666 1666 1666 1666 1666	Total 10000 10000 10000 10000 10000	Local 0.498259 0.489010 0.470514 0.442770 0.405777 0.359536	Total 0.498259 0.987269 1.457783 1.900553 2.306330 2.665867	
Try 5						
Runtime 1	.08e-04 [s]					
Process 0 1 2 3 4 5	Total 6 6 6 6 6	problemSize 1666 1666 1666 1666 1666	Total 10000 10000 10000 10000 10000	Local 0.498259 0.489010 0.470514 0.442770 0.405777 0.359536	Total 0.498259 0.987269 1.457783 1.900553 2.306330 2.665867	
6 Cores CPII	- Size Probl	em 20000				
Try 1	5120 11001	Cili 20000				
_	.01e-05 [s]					
Process 0 1 2 3 4 5	Total 6 6 6 6 6	problemSize 3333 3333 3333 3333 3333 3333	Total 20000 20000 20000 20000 20000 20000	Local 0.498407 0.489151 0.470638 0.442868 0.405842 0.359560	Total 0.498407 0.987558 1.458196 1.901064 2.306907 2.666467	
Try 2						
Runtime 5	.20e-05 [s]					
Process 0 1 2 3 4 5	Total 6 6 6 6 6	problemSize 3333 3333 3333 3333 3333 3333	Total 20000 20000 20000 20000 20000 20000	Local 0.498407 0.489151 0.470638 0.442868 0.405842 0.359560	Total 0.498407 0.987558 1.458196 1.901064 2.306907 2.666467	
Try 3						
Runtime 5	.86e-05 [s]					
Process 0	Total 6	problemSize 3333	Total 20000	Local 0.498407	Total 0.498407	

1	6	3333	20000	0.489151	0.987558	
2	6	3333	20000	0.470638	1.458196	
3 4	6 6	3333 3333	20000 20000	0.442868 0.405842	1.901064 2.306907	
5 	6 	3333	20000	0.359560	2.666467	
Try 4						
Runtime 1.6	55e-04 [s]					
Process 0	Total 6	problemSize 3333	Total 20000	Local 0.498407	Total 0.498407	
1	6	3333	20000	0.489151	0.987558	
2 3	6 6	3333 3333	20000 20000	0.470638 0.442868	1.458196 1.901064	
4	6	3333	20000	0.405842	2.306907	
5 	6 	3333 	20000	0.359560 	2.666467 	
Try 5 Runtime 7.0	)3a-05 [e]					
Process	Total	problemSize	Total	Local	Total	
0	6	3333	20000	0.498407	0.498407	
1 2	6 6	3333 3333	20000 20000	0.489151 0.470638	0.987558 1.458196	
3	6	3333	20000	0.442868	1.901064	
4 5	6 6	3333 3333	20000 20000	0.405842 0.359560	2.306907 2.666467	
Try 1						
Runtime 1.9	00e-04 [s]					
Runtime 1.9	Total	problemSize	Total	Local	Total	
Runtime 1.9		problemSize 1250 1250	Total 10000 10000	Local 0.374349 0.370443	Total 0.374349 0.744792	
Runtime 1.9 Process 0 1 2	Total 8 8 8	1250 1250 1250	10000 10000 10000	0.374349 0.370443 0.362630	0.374349 0.744792 1.107422	
Runtime 1.9 Process 0 1 2 3 4	Total 8 8 8 8	1250 1250 1250 1250 1250	10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286	0.374349 0.744792 1.107422 1.458333 1.793620	
Runtime 1.9 Process 0 1 2 3 4 5	Total 8 8 8 8 8	1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286	0.374349 0.744792 1.107422 1.458333 1.793620	
Runtime 1.9 Process 0 1 2 3 4	Total 8 8 8 8	1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286	0.374349 0.744792 1.107422 1.458333 1.793620	
Runtime 1.9 Process 0 1 2 3 4 5 6	Total 8 8 8 8 8 8	1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693	
Runtime 1.9  Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8	1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7	Total 8 8 8 8 8 8 8 8 72e-04 [s]	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1	Total 8 8 8 8 8 8 8 8 72e-04 [s] Total 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 Total 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974 	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2	Total 8 8 8 8 8 8 8 8 72e-04 [s] Total 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 Total 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974 	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667 	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4	Total 8 8 8 8 8 8 8 72e-04 [s] Total 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4 5 5 6 7 5 6 7	Total 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4	Total 8 8 8 8 8 8 8 72e-04 [s] Total 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9  Process 0 1 2 3 4 5 6 7  Try 2  Runtime 1.7  Process 0 1 2 3 4 5 6 6 7	Total 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	problemSize 1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	problemSize 1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4 5 6 7 Try 3 Runtime 1.4 Process	Total     8     8     8     8     8     8     7     72e-04 [s]  Total     8     8     8     8     8     7	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7 Try 2 Runtime 1.7 Process 0 1 2 3 4 5 6 7 Try 3 Runtime 1.4	Total 8 8 8 8 8 8 8 8 72e-04 [s] Total 8 8 8 8 8 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9 Process 0 1 2 3 4 5 6 7  Try 2 Runtime 1.7 Process 0 1 2 3 4 5 6 7  Try 3 Runtime 1.4 Process 0 1 2 2 3 4 5 6 7	Total 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974 	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667 Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667	
Runtime 1.9  Process  0 1 2 3 4 5 6 7  Try 2  Runtime 1.7  Process  0 1 2 3 4 5 6 7  Try 3  Runtime 1.4  Process  0 1	Total 8 8 8 8 8 8 8 8 72e-04 [s] Total 8 8 8 8 8 77e-04 [s] Total 8 8 8	1250 1250 1250 1250 1250 1250 1250 1250	10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667 	

7	8	1250	10000	0.264974	2.666667
Try 4					
Runtime 1.6	1e-04 [s]				
Process 0 1 2 3 4 5 6	Total 8 8 8 8 8 8	problemSize 1250 1250 1250 1250 1250 1250 1250	Total 10000 10000 10000 10000 10000 10000 10000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.6666667
Try 5					
Runtime 6.8	3e-05 [s]				
Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8 8	problemSize 1250 1250 1250 1250 1250 1250 1250 1250	Total 10000 10000 10000 10000 10000 10000 10000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.6666667
8 Cores CPU -	Size Probl	em 2000			
Try 1	5120 11001	Ciii 20000			
Runtime 1.6	6e-04 [s]				
Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8	problemSize 2500 2500 2500 2500 2500 2500 2500 2500 2500	Total 20000 20000 20000 20000 20000 20000 20000 20000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667
Try 2					
Runtime 7.4	0e-05 [s]				
Process 0 1 2 3 4 5 6	Total 8 8 8 8 8 8	problemSize	Total 20000 20000 20000 20000 20000 20000 20000 20000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.6666667
Try 3					
Runtime 2.2	6e-04 [s]				
Process 0 1 2 3 4 5 6	Total 8 8 8 8 8 8	problemSize 2500 2500 2500 2500 2500 2500 2500	Total 20000 20000 20000 20000 20000 20000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693

7	8	2500	20000	0.264974	2.666667
Try 4					
Runtime 6.47	e-05 [s]				
Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8	problemSize	Total 20000 20000 20000 20000 20000 20000 20000 20000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667
Try 5					
Runtime 6.13	e-05 [s]				
Process 0 1 2 3 4 5 6 7	Total 8 8 8 8 8 8 8	problemSize 2500 2500 2500 2500 2500 2500 2500 2500	Total 20000 20000 20000 20000 20000 20000 20000 20000	Local 0.374349 0.370443 0.362630 0.350911 0.335286 0.315755 0.292318 0.264974	Total 0.374349 0.744792 1.107422 1.458333 1.793620 2.109375 2.401693 2.666667