ENEL 869 – Lab 03

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Time to run

Sine

|  |  |  |
| --- | --- | --- |
| Angle (pirad) | Taylor series (us) | Built-in (us) |
| 0 | 2.51 | 3 |
| 0.3 | 2.51 | 52.82 |
| 0.5 | 2.47 | 18 |
| 0.8 | 2.5 | 57.31 |
| 1 | 2.65 | 44.9 |
| -0.3 | 2.4 | 53 |
| -0.5 | 2.5 | 18.08 |
| -0.8 | 2.63 | 58 |
| -1 | 2.58 | 48.23 |

Cosine

|  |  |  |
| --- | --- | --- |
| Angle (pirad) | Taylor series (us) | Built-in (us) |
| 0 | 2.25 | 3 |
| 0.3 | 2.3 | 48.79 |
| 0.5 | 2.5 | 17 |
| 0.8 | 2.2 | 62.38 |
| 1 | 2.6 | 46 |
| -0.3 | 2.4 | 48.44 |
| -0.5 | 2.6 | 17.92 |
| -0.8 | 2.4 | 61.62 |
| -1 | 2.5 | 45 |

Accuracy difference

Sine

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Angle (pirad) | Taylor series | Built-in | Difference | Difference (pirad) |
| 0 | 0 | 0 | 0 | 0 |
| 0.3 | 26509 | 26509 | 0 | 0 |
| 0.5 | 32762 | 32768 | 6 | 0.00018 |
| 0.8 | 18902 | 19260 | 358 | 0.01093 |
| 1 | 2528 | 0 | 2528 | 0.07715 |
| -0.3 | -26510 | -26509 | 1 | 0.00003 |
| -0.5 | -32762 | -32768 | 6 | 0.00018 |
| -0.8 | -18903 | -19260 | 357 | 0.01089 |
| -1 | 2528 | 0 | 2528 | 0.07715 |

Cosine

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Angle (pirad) | Taylor series | Built-in | Difference | Difference (pirad) |
| 0 | 32767 | 32786 | 19 | 0.00058 |
| 0.3 | 19261 | 19260 | 1 | 0.00003 |
| 0.5 | -27 | 0 | 27 | 0.00082 |
| 0.8 | -27693 | -26509 | 1184 | 0.03613 |
| 1 | 25879 | -32768 | 6889 | 0.21024 |
| -0.3 | 19261 | 19260 | 1 | 0.00003 |
| -0.5 | -27 | 0 | 27 | 0.00082 |
| -0.8 | -27693 | -26509 | 1184 | 0.03613 |
| -1 | 25879 | -32758 | 6879 | 0.20993 |