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| Middle Rectangle Form |  |  |  |  |
| Divisions | Step | Approximation | Error assesment | Abs error |
| N = 2 | h=(b-a)/2 | Q\_h = 3.09839 | — | 0.043206 |
| N = 4 | h=(b-a)/4 | Q\_h/2 = 3.12994 | R\_h/2 = 0.010517 | 0.0116551 |
| N = 16 | h=(b-a)/16 | Q\_h/8 = 3.13861055505 | R\_h/8 = 0.00289099770148 | 0.00298209853666 |
| N = 32 | h=(b-a)/32 | Q\_h/16 = 3.14084248371 | R\_h/16 = 0.000743976217615 | 0.000750169883813 |
| N = 64 | h=(b-a)/64 | Q\_h/32 = 3.14140481381 | R\_h/32 = 0.000187443367173 | 0.000187839782293 |
| N = 128 | h=(b-a)/128 | Q\_h/64 = 3.14154567495 | R\_h/64 = 4.69537132615e-05 | 4.6978642509e-05 |
| N = 256 | h=(b-a)/256 | Q\_h/128 = 3.14158090776 | R\_h/128 = 1.17442705008e-05 | 1.17458310065e-05 |
| N = 512 | h=(b-a)/512 | Q\_h/256 = 3.14158971706 | R\_h/256 = 2.93643335869e-06 | 2.93653093042e-06 |
| N = 1024 | h=(b-a)/1024 | Q\_h/512 = 3.14159191945 | R\_h/512 = 7.34131208417e-07 | 7.34137305169e-07 |
| N = 2048 | h=(b-a)/2048 | Q\_h/1024 = 3.14159247006 | R\_h/1024 = 1.83534230924e-07 | 1.83534612397e-07 |
| N = 4096 | h=(b-a)/4096 | Q\_h/2048 = 3.14159260771 | R\_h/2048 = 4.58836468079e-08 | 4.5883671973e-08 |
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| Simpson Form |  |  |  |  |
| Divisions | Step | Approximation | Error assesment | Abs error |
| N = 2 | h=(b-a)/2 | Q\_h = 3.14294 | — | 0.00134873 |
| N = 4 | h=(b-a)/4 | Q\_h/2 = 3.1417 | R\_h/2 = 8.28955e-05 | 0.000105302 |
| N = 16 | h=(b-a)/16 | Q\_h/8 = 3.14159975407 | R\_h/8 = 6.54675445485e-06 | 7.10048164576e-06 |
| N = 32 | h=(b-a)/32 | Q\_h/16 = 3.141593107 | R\_h/16 = 4.43138261463e-07 | 4.53407723811e-07 |
| N = 64 | h=(b-a)/64 | Q\_h/32 = 3.14159268209 | R\_h/32 = 2.83274281365e-08 | 2.84963017627e-08 |
|  |  |  |  |  |