

n=6

Approximate

$$\int_0^1 \sqrt{1+x^4} dx$$

Simpson's

i	Xi	F(Xi)	M	MF(Xi)
0	0.0000	1.0000	1	1.0000
1	0.1667	1.0004	4	4.0015
2	0.3333	1.0062	2	2.0123
3	0.5000	1.0308	4	4.1231
4	0.6667	1.0943	2	2.1886
5	0.8333	1.2175	4	4.8699
6	1.0000	1.4142	1	1.4142

19.6097

$$\int_0^1 \sqrt{1+x^4} dx \approx 1.0894$$

Trapezoidal

i	Xi	F(Xi)	M	MF(Xi)
0	0.0000	1.0000	1	1.0000
1	0.1667	1.0004	2	2.0008
2	0.3333	1.0062	2	2.0123
3	0.5000	1.0308	2	2.0616
4	0.6667	1.0943	2	2.1886
5	0.8333	1.2175	2	2.4350
6	1.0000	1.4142	1	1.4142

13.1124

$$\int_0^1 \sqrt{1+x^4} dx \approx .0927$$

Midpoint

i	Xi	F(Xi)	M	MF(Xi)
1	0.0833	1.0000	1	1.0000
2	0.2500	1.0020	1	1.0020
3	0.4167	1.0150	1	1.0150
4	0.5833	1.0563	1	1.0563
5	0.7500	1.1473	1	1.1473
6	0.9167	1.3062	1	1.3062

6.5268

$$\int_0^1 \sqrt{1+x^4} dx \approx 1.0878$$