

1. $\Delta x = \frac{1}{2}$

i	x_i	$f(x_i)$	k	$k f(x_i)$
0	0	0	1	0
1	1/2	1/8	2	1/4
2	1	1	2	2
3	3/2	27/8	2	27/4
4	2	8	1	8

$$\sum_{i=0}^4 k f(x_i) = 17$$

$$A \approx \frac{b-a}{2n} \sum_{i=0}^n k f(x_i) \approx \frac{1}{4}(17) \approx 4.250$$

2. $\Delta x = \frac{\pi}{4}$

i	x_i	$f(x_i)$	k	$k f(x_i)$
0	0	1	1	1
1	$\pi/4$	$\sqrt{2}/2$	2	$\sqrt{2}$
2	$\pi/2$	0	2	0
3	$3\pi/4$	$-\sqrt{2}/2$	2	$-\sqrt{2}$
4	π	-1	1	-1

$$\sum_{i=0}^4 k f(x_i) = 0$$

$$A \approx \frac{b-a}{2n} \sum_{i=0}^n k f(x_i) \approx \frac{\pi}{8}(0) \approx 0$$

3. $\Delta x = 1$

i	x_i	$f(x_i)$	k	$k f(x_i)$
0	2	1/3	1	1/3
1	3	1/4	2	1/2
2	4	1/5	2	2/5
3	5	1/6	2	1/3
4	6	1/7	2	2/7
5	7	1/8	2	1/4
6	8	1/9	2	2/9
7	9	1/10	2	1/5
8	10	1/11	1	1/11

$$\sum_{i=0}^8 k f(x_i) = \frac{36251}{13860}$$

$$A \approx \frac{b-a}{2n} \sum_{i=0}^n k f(x_i) \approx \frac{1}{2} \frac{36251}{13860} \approx 1.308$$

4. $\Delta x = \frac{1}{6}$

i	x_i	$f(x_i)$	k	$k f(x_i)$
0	2	$\sqrt{5}$	1	$\sqrt{5}$
1	13/6	$\sqrt{205}/6$	2	$\sqrt{205}/3$
2	7/3	$\sqrt{58}/3$	2	$2\sqrt{58}/3$
3	5/2	$\sqrt{29}/2$	2	$\sqrt{29}$
4	8/3	$\sqrt{73}/3$	2	$2\sqrt{73}/3$
5	17/6	$5\sqrt{13}/6$	2	$5\sqrt{13}/3$
6	3	$\sqrt{10}$	1	$\sqrt{10}$

$$\sum_{i=0}^6 k f(x_i) = 32.339$$

$$A \approx \frac{b-a}{2n} \sum_{i=0}^n k f(x_i) \approx \frac{1}{12} (32.339) \approx 2.695$$