Solution 22.16

The first iteration involves computing 1 and 2 segment trapezoidal rules and combining them as

$$I = (16-0)\frac{0+0}{2} = 0$$

$$I = (16-0)\frac{0+2(2.4)+0}{4} = 19.2$$

$$I = \frac{4(19.2)-0}{3} = 25.6$$

and computing the approximate error as

$$\varepsilon_a = \left|\frac{25.6-19.2}{25.6}\right| \times 100\% = 25\%$$

The computation can be continues as in the following tableau until ε_a < 1%.

	1	2	3
n	**ε_a →**	**25.0000%**	**0.7888%**
1	0.00000000	25.60000000	29.29777778
2	19.20000000	29.06666667	
4	26.60000000		