1.

$$\int_0^{2\pi} \operatorname{sen}(x/2)\,dx$$

$$\Delta x = \frac{2\pi}{8} \qquad \Delta x = \frac{\pi}{4}$$

i	x_i	$f(x_i)$
0	0	0
1	$\pi/4$	0.3826
2	$\pi/2$	0.7071
3	$3\pi/4$	0.9238
4	π	1
5	$5\pi/4$	0.9238
6	$3\pi/2$	0.7071
7	$7\pi/4$	0.3826
8	2π	0

$$S_8 = \frac{\pi/4}{3}\,(0 + 4(0.3826) + 2(0.7071) + 4(0.9238) + 2(1) + 4(0.9238) + 2(0.7071) + 4(0.3826) + 0)$$

$$S_8 = 4.0001$$