$$\int_a^b f(x)\,dx = S(x)$$

$$f(x) = 1$$

$$\int_0^{2h} dx = 2h = S(x)$$

$$= h\left(\tfrac{1}{3}f(x_0) + \tfrac{4}{3}f(x_1) + \tfrac{1}{3}f(x_2)\right)$$

$$= h\left(\tfrac{1}{3} + \tfrac{4}{3} + \tfrac{1}{3}\right)$$

$$= h\left(\tfrac{6}{3}\right)$$

$$2h = 2h$$