

1. Suppose $f(x) = c_3x^3 + c_2x^2 + c_1x + c_0$ (i.e. any cubic function). Show that S_2 gives the exact value of $\int_0^2 f(x) dx$.

Note: The exact same argument works for $\int_a^b f(x) dx$ but the algebra is a little more annoying.