1. Suppose we are given $f : [a, b] \to \mathbb{R}$ and the values of $(a, f(a))$, $(\frac{a+b}{2}, f(\frac{a+b}{2}))$, $(b, f(b))$.

   (a) Find the line $p_1 : [a, b] \to \mathbb{R}$ passing through $(a, f(a))$ and $(b, f(b))$

   (b) Find the quadratic $p_2 : [a, b] \to \mathbb{R}$ passing through $(a, f(a))$, $(\frac{a+b}{2}, f(\frac{a+b}{2}))$, $(b, f(b))$

   (c) Fill in the following table:

Approximation of $\int_a^b f(x)dx$	
(Linear) $\int_a^b p_1(x)dx$	
(Quadratic) $\int_a^b p_2(x)dx$	