Derive Simpson's Rule

Derive Simpson's rule by approximating $f(x)$ by a quadratic polynomial connecting the points $(0, f(0))$, $(h, f(h))$ and $(2h, f(2h))$.

(a) Let $g(x) = a + bx + cx^2$. Determine the values of a, b and c such that $g(x)$ passes through the points $(0, f(0))$, $(h, f(h))$ and $(2h, f(2h))$.

(b) Use $f(x) \approx g(x)$ to derive Simpson's rule.