HW:

Exercise: ① Let f be a continuous function and g, h two differentiable functions.

Prove that: $\frac{d}{dx}\left(\int_{g(x)}^{h(x)} f(t)\,dt\right) = f(h(x)) \cdot h'(x) - f(g(x)) \cdot g'(x)$.

② Use ① to find the derivatives of:

a- $f(x) = \int_{\sqrt{x}}^{x^3} \sin t\,dt$

b- $g(x) = \int_{\tan x}^{x^2} \cos t\,dt$.