

(1)[5 points] Find the derivative of

$$y = \int_3^{\sqrt{x}} \frac{\cos t}{t} dt .$$

(2)[5 points] Evaluate

$$\int e^x \sqrt{1 + e^x} dx .$$

(3)[5 points] Evaluate

$$\int_0^1 x^2(1 + 2x^3)^5 dx .$$