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**Name:**

[1 pt]

**Problem 1.** Find the derivative of  $f(x) = \int_{\sqrt{x}}^{x^3} \cos(\theta^2) d\theta$ .

[5 pts]

**Problem 2.** Find the distance travelled by a particle moving in a straight line in the time interval  $[0, 3]$  when its velocity varies with time  $t$  as  $v(t) = 3t - 5$ .

[5 pts]