

## Lesson 8.5

1. Use Part 2 of the Fundamental Theorem to find the derivative of each function.

(a)  $y = \int_0^x e^{t^2} dt$

(b)  $y = \int_x^2 \frac{1+\cos t}{1-\sin t} dt$

(c)  $y = \int_{3x^2}^0 \arctan(\ln t) dt$

2. Let  $F(x) = \int_0^{x^2} \cos(\sqrt{t}) dt$ .

(a) Find  $F(0)$ .

(b) Find  $F'(x)$

(c) Find  $F'(\pi)$