Drill Handout

Section 5.3

December 2, 2019

Name:_____

(1) Simplify the following expressions:

(a)

$$\frac{d}{dx} \int_{1}^{\sqrt{x}} \sin(t^2) dt$$

(b)

$$\frac{d}{dx} \int_{x}^{0} \frac{ds}{\sqrt{s^2 + 1}}$$

(c)

$$\frac{d}{dx} \int_{-x}^{x^2} e^{r^2 - r} dr$$

(2) Evaluate the following integrals using the Fundamental Theorem of Calculus:

(a)

$$\int_{1}^{4} \frac{1 - \sqrt{t}}{t} dt$$

(b)

$$\int_{0}^{1} (1 - \sqrt{s})(s+2)ds$$

(c)

$$\int_0^1 \frac{1}{e^x} dx$$