SECTION 5-5: SUBSTITUTION (DAY 1)

1. Compute $\int t\sin(t^2 + 1)\, dt$

2. Compute $\int e^{4x-9}\, dx$

3. Compute $\int \dfrac{e^{\sqrt{x}}}{\sqrt{x}}\, dx.$

4. Compute $\int_1^4 \dfrac{e^{\sqrt{x}}}{\sqrt{x}}\, dx.$

5. Compute $\int \dfrac{\arctan(x)}{1+x^2}\, dx$

6. Compute $\int \dfrac{x^3}{\sqrt{1-x^4}}\, dx$

7. Compute $\int \dfrac{x}{\sqrt{1-x^4}}\, dx$.

8. Compute $\int_0^{\pi/6} \dfrac{\sin(t)}{(\cos(t))^2}\, dt$ two ways: (1) by computing the antiderivative using substitution and then using FTC2 to evaluate using the original bounds; (2) by substituting and changing the bounds to match the substitution.