

Evaluate the following integrals, and *check your answers!!*

1. $\int \frac{1}{\sqrt{1-x}} dx$ ($u = 1 - x$)

2. $\int \frac{3x^2}{\sqrt{1-x^6}} dx$ ($u = x^3$)

3. $\int_1^3 \frac{x}{1+x^2} dx$ ($u = 1 + x^2$)

4. $\int \frac{x}{1+x^4} dx$ ($u = x^2$)

5. $\int_2^5 \frac{1}{x \ln(x)} dx$ ($u = \ln(x)$)

Evaluate the following integrals, and check your answer by differentiation.

1. $\int x^2 \sin(x^3) dx$

2. $\int 7e^{4x} dx$

3. $\int \frac{\sin(\sqrt{x})}{\sqrt{x}} dx$

4. $\int \frac{e^x}{1 + e^{2x}} dx$

5. $\int \sec(x) \tan(x) dx$

6. $\int \tan(x) (\sec(x))^2 dx$