

Write the integral in terms of u and du and then evaluate the resulting integral. (Practice #1)

1. $\int_0^1 (x-7)^3 dx, \quad u = x - 7$

2. $\int_0^2 5x\sqrt{x^2+1}dx, \quad u = x^2 + 1$

3. $\int_0^1 \frac{x^3 dx}{(4-2x^4)^{11}}, \quad u = 4-2x^4$

4. $\int_0^1 x(x^2+1)^9 dx, \quad u = x^2 + 1$

5. $\int_0^1 x\sqrt{x^2+1}dx, \quad u = x^2 + 1$

6. $\int_0^{\frac{\pi}{4}} \sec^2 x \tan x dx, \quad u = \tan x$

7. $\int_0^1 x \sec^2(x^2) dx, \quad u = x^2$