AP Calculus BC
Section 6.2 – U Substitution (FDWK)

Evaluate the following integrals.

1. $\int \dfrac{dx}{(1-x)^2}$

2. $\int \sqrt{\tan x}\,\sec^2 x\,dx$

3. $\int \dfrac{dx}{x\ln x}$

4. $\int \cos(3z+4)\,dz$

5. $\int \dfrac{\ln^6 x}{x}\,dx$

6. $\int x^{1/3}\cos\left(x^{4/3}-8\right)dx$

7. $\int \dfrac{\sin(2t+1)}{\cos^2(2t+1)}\,dt$

8. $\int \dfrac{1}{\cot 3x}\,dx$

9. $\int \tan^7\left(\dfrac{x}{2}\right)\sec^2\left(\dfrac{x}{2}\right)dx$

10. $\int \dfrac{dy}{\sqrt{5y+8}}$

11. $\int_{\pi/4}^{3\pi/4} \cot x\, dx$

12. $\int_{-1}^{3} \dfrac{x\,dx}{x^2+1}$

13. $\int_0^3 \sqrt{y+1}\, dy$

14. $\int_{-\pi/4}^{0} \tan x \sec^2 x\, dx$

15. $\int_0^1 \dfrac{10\sqrt{\theta}}{\left(1+\theta^{3/2}\right)^2}d\theta$

16. $\int_{-\pi}^{\pi} \dfrac{\cos x}{\sqrt{4+3\sin x}}dx$