

1. Compute $\int \frac{\sec^2(x)}{\tan(x)} dx$

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

3. Compute $\int \frac{\sin(\theta)}{1 + \cos(\theta)} d\theta$

4. Compute $\int \frac{1}{x \ln(x)} dx$

5. Compute $\int \frac{\sin(4/x)}{x^2} dx$

6. Compute $\int \frac{e^x}{e^x - 3} dx$

7. Compute $\int \frac{1}{9+x^2} dx$

8. Compute $\int \sqrt{x}(x^4+x) dx$

9. Compute $\int \cos(x) \sin(\sin(x)) dx$

10. Compute $\frac{d}{dx} [x \ln(x) - x]$. Then compute $\int s^2 \ln(s^3) ds$

11. Compute $\int x\sqrt{x-1} dx$

12. Compute $\int_1^3 \frac{(\ln(x))^3}{x} dx$