

1. Compute $\int_0^{\pi/2} \cos^3(x) \sin(x) dx$

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

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

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

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

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

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

8. Compute $\int \cot(\theta) d\theta$

9. Compute $\int x(x+1)^{1/4} dx$