

2024 Olympics - Integration

1. $\int x(2x + 6)^{10} dx$

2. $\int 4x(3x^2 + 1)^5 dx$

3. $\int x \ln |x^2| dx$

4. $\int \tan^3 x dx$

5. $\int \sin^3 x \cos^2 x dx$

6. $\int 2x \cos(3x + 1) dx$

7. $\int \sqrt{1-x^2} \, dx$

8. $\int \frac{\sin 2\theta}{\sin \theta - \sin^3 \theta} \, d\theta$