# Trigonometric Product Integrals Worksheet

**For problems 1 - 24, evaluate the integral using the appropriate method.**

1. $\int \cos^3 x \, dx$

2. $\int \sin^2 2x \, dx$

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

4. $\int \cos^7 x \, dx$

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

6. $\int \sin^5 x \cos^3 x \, dx$

7. $\int \sin^6 x \, dx$

8. $\int \sin^4 x \cos^2 x \, dx$

9. $\int \tan^3 x \sec^4 x \, dx$

10. $\int \sec^6 x \, dx$

11. $\int \tan^3 x \sec^3 x \, dx$

12. $\int \tan^5 x \sec x \, dx$

13. $\int \tan^6 x \, dx$

14. $\int \cot^4 x \, dx$

15. $\int \sqrt{\sin x} \cos^3 x \, dx$

16. $\int \frac{\cos^3 x}{\sqrt{\sin x}} \, dx$

17. $\int (\tan x + \cot x)^2 \, dx$

18. $\int \cot^3 x \csc^3 x \, dx$

19. $\int_0^{\frac{\pi}{4}} \sin^3 x \, dx$

20. $\int_0^1 \tan^2 \left(\frac{\pi}{4} x\right) dx$

21. $\int \csc^4 x \cot^4 x \, dx$

22. $\int \left(1 + \sqrt{\cos x}\right)^2 \sin x \, dx$

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

24. $\int \frac{\sec x}{\cot^5 x} \, dx$