

King Saud University

College of Sciences

Department of Mathematics

106 Math Exercises

(8)

INTEGRATION

of

Trigonometric Functions

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Evaluate the following integrals:

1-

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

2-

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

3-

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

4-

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

5-

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

6-

$$\int \frac{1}{\sec^2 x} \, dx$$

7-

$$\int \frac{1}{\sec^4 x} dx$$

8-

$$\int \tan^3 x \sec^3 x dx$$

9-

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

10-

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

11-

$$\int \sec^4 x \, dx$$

12-

$$\int \frac{\sec x}{\cot^3 x} \, dx$$

13-

$$\int \cos x \cos 5x \, dx$$

14-

$$\int \sin 4x \cos 3x \, dx$$

15-

$$\int \sin 5x \sin 3x \, dx$$

16-

$$\int \cos 2x \sin x \, dx$$

17-

$$\int \cosh^3 x \sinh^2 x \, dx$$

18-

$$\int \tanh^3 x \operatorname{sech}^4 x \, dx$$

19-

$$\int \tan^4 x \, dx$$

20-

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

21-

$$\int \tan^3 x \, dx$$