

Trigonometric Substitutions Worksheet

For problems 1 - 22, evaluate the integral using the appropriate method.

$$1. \int \frac{1}{x \sqrt{4 - x^2}} dx$$

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

$$5. \int \frac{1}{x^2 \sqrt{x^2 - 25}} dx$$

$$7. \int \frac{x}{\sqrt{4 - x^2}} dx$$

$$9. \int \frac{1}{(x^2 - 1)^{\frac{3}{2}}} dx$$

$$11. \int \frac{1}{(36 + x^2)^2} dx$$

$$13. \int \frac{1}{\sqrt{9 - x^2}} dx$$

$$15. \int \frac{x}{(16 - x^2)^2} dx$$

$$17. \int \frac{x^3}{\sqrt{9x^2 + 49}} dx$$

$$19. \int \frac{1}{x^4 \sqrt{x^2 - 3}} dx$$

$$21. \int \frac{(4 + x^2)^2}{x^3} dx$$

$$2. \int \frac{\sqrt{4 - x^2}}{x^2} dx$$

$$4. \int \frac{1}{x^2 \sqrt{x^2 + 9}} dx$$

$$6. \int \frac{1}{x^3 \sqrt{x^2 - 25}} dx$$

$$8. \int \frac{x}{x^2 + 9} dx$$

$$10. \int \frac{1}{\sqrt{4x^2 - 25}} dx$$

$$12. \int \frac{1}{(16 - x^2)^{\frac{5}{2}}} dx$$

$$14. \int \frac{1}{49 + x^2} dx$$

$$16. \int x \sqrt{x^2 - 9} dx$$

$$18. \int \frac{1}{x \sqrt{25x^2 + 16}} dx$$

$$20. \int \frac{x^2}{(1 - 9x^2)^{\frac{3}{2}}} dx$$

$$22. \int \frac{3x - 5}{\sqrt{1 - x^2}} dx$$