

Trigonometric Substitution Worksheet

1. Use the method of trigonometric substitution to evaluate each of the following indefinite integrals.

(a) $\int \frac{2x}{\sqrt{1-x^2}} dx$

(b) $\int \frac{4x}{9-x^2} dx$

(c) $\int \frac{5x}{4+25x^2} dx$

(d) $\int \frac{x}{16x^2-9} dx$

(e) $\int \frac{1}{\sqrt{16+x^2}} dx$

(f) $\int \frac{x^5}{\sqrt{x^2+4}} dx$

(g) $\int x^2 \sqrt{9-x^2} dx$

(h) $\int \frac{\sqrt{x^2-1}}{x} dx$