

Section 3.3 - Trigonometric Substitution

Evaluate the following integrals.

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

(2)
$$\int_{1/2}^1 \frac{dx}{x^2\sqrt{x^2+4}}$$

(3)
$$\int_0^{1/2} \frac{x^2}{\sqrt{1-x^2}} dx$$

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

(5)
$$\int \frac{dz}{z^3\sqrt{z^2-4}}$$

(6)
$$\int \frac{t dt}{(t^2+1)^{3/2}}$$

(7)
$$\int \frac{x^2 dx}{(x^2-1)^{3/2}}$$

(8)
$$\int \sqrt{x^2-4x+3}$$

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

(10)
$$\int \frac{dx}{\sqrt{x^2+4x+13}}$$

(11)
$$\int \frac{x dx}{\sqrt{12-6x-x^2}}$$

(12)
$$\int \frac{dx}{(x^2+6x+6)^2}$$