

Set 037 Trigonometric Substitution

[1] Use trig substitution as needed to find each antiderivative.

$$[a] \int \sqrt{16-x^2} dx$$

$$[b] \int x\sqrt{16-x^2} dx$$

$$[c] \int \frac{1}{\sqrt{9+x^2}} dx$$

$$[d] \int \frac{2x}{\sqrt{9+x^2}} dx$$

$$[e] \int \frac{\sqrt{x^2-4}}{x} dx$$

$$[f] \int \frac{\sqrt{9-x^2}}{x^2} dx$$

$$[g] \int \frac{1}{x^3\sqrt{x^2-9}} dx$$

$$[h] \int \frac{1}{\sqrt{x^2-25}} dx$$

$$[i] \int \frac{x}{\sqrt{x^2-25}} dx$$

$$*[j] \int \frac{1}{a^2+x^2} dx$$

$$*[k] \int \frac{1}{\sqrt{a^2-x^2}} dx$$

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