

(7.3) Trigonometric Substitution

Full Name: _____

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

(a) $-2\sqrt{1-x^2} + C$

(b) $\ln \left| \frac{x}{4} + \frac{\sqrt{16+x^2}}{4} \right| + C$

(c) $2^5 \left(\frac{1}{5} \left(\frac{\sqrt{x^2+4}}{5} \right)^5 - \frac{2}{3} \left(\frac{\sqrt{x^2+4}}{2} \right)^3 + \frac{\sqrt{x^2+4}}{2} \right) + C$

(d) $\frac{81}{8} \sin^{-1} \left(\frac{x}{3} \right) - \frac{9}{8} x \sqrt{9-x^2} + \frac{1}{4} x^3 \sqrt{9-x^2} + C$

(e) $\cos^{-1} \left(\frac{1}{x} \right) - \sqrt{x^2-1} + C$