

Section 7.3

Expression	Substitution	θ	Condition
$\sqrt{a^2 - x^2}$	$x = a\sin\theta$	$\theta = \sin^{-1}\left(\frac{x}{a}\right)$	$-\pi/2 \leq \theta \leq \pi/2$
$\sqrt{a^2 + x^2}$	$x = a\tan\theta$	$\theta = \tan^{-1}\left(\frac{x}{a}\right)$	$-\pi/2 < \theta < \pi/2$
$\sqrt{x^2 - a^2}$	$x = a\sec\theta$	$\theta = \sec^{-1}\left(\frac{x}{a}\right)$	$0 \leq \theta < \pi/2$ Or $\pi \leq \theta < \frac{3\pi}{2}$

Trigonometric Substitution