Some useful formulas

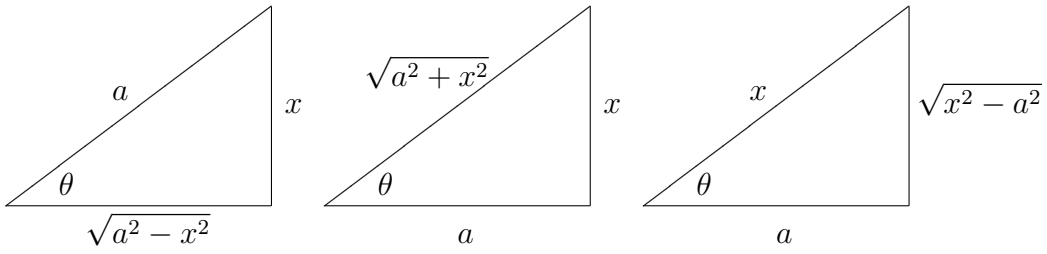
Trig identities

$$\cos^2\theta = \frac{1+\cos 2\theta}{2}$$

$$\sin^2\theta = \frac{1-\cos 2\theta}{2}$$

Trig subs

$x = a\sin\theta$	$x = a\tan\theta$	$x = a\sec\theta$
$dx = a\cos\theta\, d\theta$	$dx = a\sec^2\theta\, d\theta$	$dx = a\sec\theta\tan\theta\, d\theta$
$\sqrt{a^2-x^2} = a\cos\theta$	$\sqrt{a^2+x^2} = a\sec\theta$	$\sqrt{x^2-a^2} = a\tan\theta$



Some useful integrals Most of those on page 431 of the text you should know (especially 1–7). Here are some others

$$\int \sec^2 x\, dx = \tan x + C$$

$$\int \csc^2 x\, dx = -\cot x + C$$

$$\int \sec x\tan x\, dx = \sec x + C$$

$$\int \csc x\cot x\, dx = -\csc x + C$$

$$\int \tan x\, dx = \ln|\sec x| + C$$

$$\int \cot x\, dx = \ln|\sin x| + C$$

$$\int \sec x\, dx = \ln|\sec x + \tan x| + C$$

$$\int \csc x\, dx = -\ln|\csc x + \cot x| + C$$