Integrals Containing Logarithmic Functions

$\int \ln x\, dx = x\ln x - x + c$
$\int (lnx)^2\, dx = x(\ln x)^2 - 2x\ln x + 2x + c$
$\int (\ln x)^3\, dx = x(\ln x)^3 - 3x(\ln x)^2 + 6x\ln x - 6x + c$
$\int (\ln x)^n\, dx = x(lnx)^n - n\int (lnx)^{(n-1)} dx$, $for\ n \neq -1$
$\int \frac{dx}{lnx} = \ln(\ln x) + \ln x + \frac{(\ln x)^2}{2.2!} + \frac{(\ln x)^3}{3.3!} + ... + c$
$\int \frac{dx}{(\ln x)^n} = \frac{-x}{[(n-1)(\ln x)^{(n-1)}]} + \frac{1}{(n-1)}\int \frac{dx}{(\ln x)^{(n-1)}}$, $for\ n \neq 1$
$\int x^m \ln x\, dx = x^{(m+1)}[\frac{(\ln x)}{(m+1)} - \frac{1}{(m+1)^2}] + c$, $for\ m \neq -1$
$\int x^m (\ln x)^n\, dx = \frac{[x^{(m+1)}(\ln x)^n]}{(m+1)} - \frac{n}{(m+1)}\int x^m (\ln x)^{(n-1)} dx\ for\ m \neq -1, n \neq -1$
$\int \frac{(\ln x)^n}{x} dx = \frac{(\ln x)^{(n+1)}}{(n+1)} + c$

Integrals Containing Inverse Hyperbolic Functions

$\int sh^{-1}\frac{x}{a}\, dx = x\, sh^{-1}\frac{x}{a} - \sqrt{(x^2 + a^2)} + k$
$\int \cosh^{-1}\frac{x}{a}\, dx = x\cosh^{-1}\frac{x}{a} - \sqrt{(x^2 - a^2)} + k$
$\int \tanh^{-1}\frac{x}{a} dx = x\tanh^{-1}\frac{x}{a} + \frac{a}{2}(a^2 - x^2) + k$
$\int \coth^{-1}\frac{x}{a} dx = x\coth^{-1}\frac{x}{a} + \frac{a}{2}\ln(x^2 - a^2) + k$