

# Assignment 4 (8/1)

...more integrals...yay...

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## Problem 1

Find the integrals of the following functions:

(a)  $\frac{\ln(x)}{(1 + \ln(x))^2}$

(b)  $x \arcsin(x)$

(c)  $x \sec^2 x$       and       $x \frac{\sec(2x) - 1}{\sec(2x) + 1}$

(d)  $\arctan(x)$

(e)  $\sqrt{a^2 - x^2}$       and       $\sqrt{4x - x^2}$

(f)  $\sin^{5/2} x \cos^3 x$

(g)  $\frac{1}{x^2 \sqrt{x^2 - 4}}$

(h)  $\frac{\sqrt{1 - x^2}}{x^4}$

(i)  $\frac{1}{(x^2 + 1)^2}$

(j)  $\frac{x^3}{\sqrt{9 + x^2}}$

(k)  $\frac{x}{\sqrt{x^2 - 2x + 3}}$