

- 14 multiple choice questions worth 5 points each.
- 2 hand graded questions worth 15 points each.
- Exam covers sections 4.9, 5.1, 5.2, 5.3, 5.4, 5.5

- No calculators!
- For the multiple choice questions, mark your answer on the answer card.
- Show all your work for the written problems. Your ability to make your solution clear will be part of your grade.

Useful Formulas

$\sum_{i=1}^n i = \frac{n(n+1)}{2}$	$\sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$
$\sum_{i=1}^n i^3 = \left[\frac{n(n+1)}{2} \right]^2$	$\sin^2 \theta + \cos^2 \theta = 1$
$1 + \tan^2 \theta = \sec^2 \theta$	$1 + \cot^2 \theta = \csc^2 \theta$
$\sin(A \pm B) = \sin A \cos B \pm \sin B \cos A$	$\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$
$\tan(A \pm B) = \frac{\tan A \pm \tan B}{1 \mp \tan A \tan B}$	$\sin A \sin B = \frac{1}{2} [\cos(A - B) - \cos(A + B)]$
$\cos A \cos B = \frac{1}{2} [\cos(A - B) + \cos(A + B)]$	$\sin A \cos B = \frac{1}{2} [\sin(A + B) + \sin(A - B)]$
$\sin^2 x = \frac{1}{2}(1 - \cos 2x)$	$\cos^2 x = \frac{1}{2}(1 + \cos 2x)$
$\sin(2\theta) = 2 \sin \theta \cos \theta$	$\cos(2\theta) = \cos^2 \theta - \sin^2 \theta$
$\int \csc x \, dx = -\ln \csc x + \cot x + C$	$\int \sec x \, dx = \ln \sec x + \tan x + C$
$\cosh t = \frac{1}{2}(e^t + e^{-t})$	$\sinh t = \frac{1}{2}(e^t - e^{-t})$
$\cosh^{-1} x = \ln(x + \sqrt{x^2 - 1})$	$\sinh^{-1} x = \ln(x + \sqrt{x^2 + 1})$
$\cosh^2 t = 1 + \sinh^2 t$	