

## Honors Calculus

Chapter 5a Test Review 2016

### Chapter 5 Review Questions

Page 401: 1 – 11 odd, 15 – 23 odd, 39 – 55 odd, 59, 65, 69, 71

Section	Formulas	Examples
5.1: Derivative of natural log	$\frac{d}{dx}(\ln u) = \frac{u'}{u}$	Page 331: 43, 77, 91
5.2: Anti Derivative – natural log	$\int \frac{1}{u} du = \ln u  + C$ $\int \tan u dx = -\ln \cos u  + C$ $\int \cot u dx = \ln \sin u  + C$ $\int \sec u dx = \ln \sec u + \tan u  + C$ $\int \csc u dx = -\ln \csc u + \cot u  + C$	Page 340: 31, 33, 41, 57, 73, 78*
5.4: Derivative of $e^x$	$\frac{d}{dx}(e^u) = e^u \cdot u'$	Page 358: 37, 61
5.4 Anti Derivative of $e^x$	$\int e^u dx = e^u + C$	Page 360: 109, 113, 123, 134*
5.5 Derivative of $\log_a u$ and $a^u$	$\frac{d}{dx} \log_a u = \frac{1}{\ln a} \frac{u'}{u}$ $\frac{d}{dx} a^u = \ln a \cdot a^u \cdot u'$	Page 368: 43, 55
5.5 Anti Derivative of $a^u$	$\int a^u du = \frac{1}{\ln a} a^u + C$	Page 369: 75

**\*Answers for even numbered questions**

Page 340: 78 :  $4 + 6\ln 5$

Page 360: 134:  $e^{-a} - e^{-b}$