**Worksheets:  MATH 161**



[**Worksheet I**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws1.pdf)(algebra problems from *Hall & Knight*)

[**Worksheet II**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws2.pdf)(more about functions: graphing rational functions; introducing hyperbolic functions)

[**Worksheet III**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws3.pdf) (limits & continuity, *Intermediate Value Theorem, Sandwich Theorem*)

[**Worksheet IV**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws4.pdf) (trigonometric limits; one-sided limits; *(sin x)/x → 1 as x → 0*)

[**Worksheet V**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws5.pdf) (average rate of change)

[**Worksheet VI**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws6.pdf) (interpreting the derivative)

[**Worksheet VII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws7.pdf) (shortcuts!)

[**Worksheet VIII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws8.pdf) (higher-order derivatives)

[**Worksheet IX**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws9.pdf)  (chain rule, implicit differentiation, log differentiation, inverse trig fcns)

[**Worksheet X**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws10.pdf) (parametric equations)

[**Worksheet XI**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws11.pdf) (related rates)

[**Worksheet XII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws12.pdf)  (shape of curves: concavity, curve sketching, finding local/global extrema; *Extreme Value Theorem*)

[**Worksheet XIII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws13.pdf) (optimization)

[**Worksheet XIV**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws14.pdf) (*l’Hôpital’s rule*)

[**Worksheet XV**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws15.pdf) (anti-derivatives; *Rolle’s Theorem*; *Mean Value Theorem*; initial value problems; indefinite intervals)

[**Worksheet XVI**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws16.pdf) (*Newton’s method*)

[**Worksheet XVII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws17.pdf) (Riemann sums)

[**Worksheet XVIII**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws18.pdf) (the Riemann integral)

[**Worksheet XIX**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws19.pdf) (*Fundamental Theorem of Calculus*)

[**Worksheet XX**](http://www.math.luc.edu/~ajs/courses/161fall2015/worksheets/ws20.pdf) (Area between curves)

**Worksheet XXI** (substitution and the *Change of Variable theorem*)

*Work!  God wills it.  That, it seems to me, is clear.*

                 - Gustave Flaubert  (letter to Louise Colet, 1845)

 [Course Home Page](http://www.math.luc.edu/~ajs/courses/161fall2015/index.pdf)          [Department Home Page](http://www.math.luc.edu/)        [Loyola Home Page](http://www.luc.edu/)