18.01 | Fall 2006 | Undergraduate

Single Variable Calculus

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Video Lectures

These video lectures of Professor David Jerison teaching 18.01 were recorded live in the Fall of 2007 and do not correspond precisely to the lectures taught in the Fall of 2006 (e.g., the lecture notes).

Note: Videos were not recorded during sessions 8, 17, 27, and 33 as these were in-class exams.

LECTURE 1: RATE OF CHANGE

LECTURE 2: LIMITS

LECTURE 3: DERIVATIVES

LECTURE 4: CHAIN RULE

LECTURE 5: IMPLICIT DIFFERENTIATION

LECTURE 6: EXPONENTIAL AND LOG

LECTURE 7: EXAM 1 REVIEW

LECTURE 9: LINEAR AND QUADRATIC APPROXIMATIONS

LECTURE 10: CURVE SKETCHING

LECTURE 11: MAX-MIN

LECTURE 12: RELATED RATES

LECTURE 13: NEWTON'S METHOD

LECTURE 14: MEAN VALUE THEOREM

LECTURE 15: ANTIDERIVATIVES

LECTURE 16: DIFFERENTIAL EQUATIONS

LECTURE 18: DEFINITE INTEGRALS

LECTURE 19: FIRST FUNDAMENTAL THEOREM

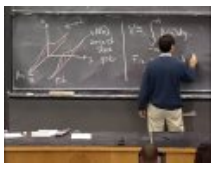
LECTURE 20: SECOND FUNDAMENTAL THEOREM

LECTURE 21: APPLICATIONS TO LOGARITHMS

LECTURE 22: VOLUMES

LECTURE 23: WORK, PROBABILITY

LECTURE 24: NUMERICAL INTEGRATION



LECTURE 25: EXAM 3 REVIEW

LECTURE 27: TRIG INTEGRALS

LECTURE 28: INVERSE SUBSTITUTION

LECTURE 29: PARTIAL FRACTIONS

LECTURE 30: INTEGRATION BY PARTS

LECTURE 31: PARAMETRIC EQUATIONS

LECTURE 32: POLAR COORDINATES

LECTURE 33: EXAM 4 REVIEW

LECTURE 35: INDETERMINATE FORMS

LECTURE 36: IMPROPER INTEGRALS

LECTURE 37: INFINITE SERIES

LECTURE 38: TAYLOR'S SERIES

LECTURE 39: FINAL REVIEW