Chapter 7 Test Outline

BK *Find an average change between two values

BK *Find the rate of change at one value → $\lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$

BK *Use the definition of the derivative to find the slope at a given *x*-value → this part is not in the book

BK *Find the equation for the tangent or normal line at a given point (both parts)

BK *Identify where a function has a horizontal or vertical tangent. (non-calc)

BK *Find the derivative using power rule, product rule, quotient rule, and chain rule. Also know special cases like ln *x* and e^x Also be able to use chain rule in conjunction with another rule.

*Given a displacement function, find and use the velocity and acceleration functions. Find when a particle is at rest, moving right, or moving left. Find when a particle is increasing or decreasing. Find the speed of a particle. → in the book

*Given the graph of *f*, sketch *f* ' or *f* " OR given the graph of *f* ', sketch *f* or *f* ". (non-calc)

*Graph a function by hand by finding the following: critical points, relative minimums/maximums, increasing/decreasing, inflection points, concave up/down, *x*-intercept(s), *y*-intercept(s) (non-calc)

*Find the absolute maximum/minimum of a function over a given interval. (non-calc)

*Solve an optimization problem.

Book work:

non-calc #1 all, 2 a+b, 3, 4

plus #7 @ Find average velocity from 1 to 3 seconds

ⓑ Find instantaneous velocity at 3 seconds

© Find speed at 3 seconds