

Exam #1 covers Chapter 1, 4.7, and Focus on Modeling with the exception of section 1.4

- Average rate of change
- Interpretation of the average rate of change
- functions
 - domain and range
 - evaluating
 - * tables
 - * graphs
 - * formulas
- lines
 - slope
 - vertical intercept
 - horizontal intercept
- Increasing and decreasing of a function
- proportionality
 - directly: $y = kx$
 - inversely: $y = \frac{k}{x}$
- power functions
- concavity
- exponential functions
 - both types of formulas
 - relative growth/decay rate
 - continuous growth/decay rate
 - converting between different formulas
 - half-life
 - doubling time
 - interest
 - * continuous
 - * compound
 - * present value
 - * future value
- logarithms
 - rules
 - solving equations
- transformations of functions
 - $f(x) + k$ shifts up
 - $f(x) - k$ shifts down
 - $f(x+k)$ shifts left
 - $f(x-k)$ shifts right
 - $kf(x)$ stretching/compressing functions
 - $-f(x)$ reflecting about the x-axis
- sums, difference, multiplication of functions
- composite functions
- polynomials
 - degree
 - number of turns
 - leading coefficient
- periodic functions
 - amplitude
 - period
 - shifting
 - graph from equation
 - equation from graph or word problem
- Logistic model
 - limiting value
 - where concavity changes
- Focus on Modeling
 - plotting data points
 - regression
 - picking the better fitting curve
- any additional topic discussed in class