

## Concepts to know Exam 1: Math 142

covers chapter 1, chapter 2 and sections 3.1, 3.2, and 3.2

- Interval notation (open and closed intervals)
- line
  - slope and its interpretation
  - equation
  - intercepts and their interpretations
- supply and demand
  - equilibrium point
- regression
  - scatter plot
  - different regression models
  - picking the "best" regression model
- Functions
  - independent and dependent variables
  - domain and range
    - \* algebraically
    - \* graphically
  - vertical line test
  - determining if a formula is a function
  - evaluating
- cost, revenue, and profit functions
  - finding the formulas
  - maximizing/minimizing a function
  - break even
- piecewise defined functions
  - domain
  - graphing
  - limits
  - continuity
- Quadratic functions
  - parabola formula
  - vertex.
  - domain/range
- graphing
- maximum or minimum value
- roots (zeroes)
  - \* factoring
  - \* quadratic formula
  - \* calculator
- Exponential functions.
  - properties of exponentials
  - domain
  - growth and decay
  - compound interest
    - \* TVM solver
    - \* by formula
  - solving exponential equations
- Logarithmic functions.
  - domain
  - log rules and properties
  - solving equations with logarithms
- Limits
  - limits from the left and from the right
  - evaluating
    - \* graphically
    - \* tables
    - \* numerically
      - the 4 different cases when evaluating
  - limits to infinity
  - vertical asymptotes
  - piecewise defined ed functions
- Vertical Asymptotes
- Horizontal Asymptote
- end behavior of a function
- continuity
  - properties of continuity
  - places where  $f(x)$  is not not continuous
- Any additional topics discussed in class