

## Final exams topics

1. Reading a graph
  - a. Is it a function?
  - b. Is it a one-to-one function?
  - c. Domain and range
  - d. Intercepts
  - e. Local minimum and maximum
  - f. Absolute minimum and maximum
  - g. Intervals on which the function increases, decreases, or is constant
  - h. Finding the average rate of change on a given interval
  - i. Evaluating
2. Graphing basic functions and their transformations
  - a. Linear
  - b. Radical
  - c. Quadratic
  - d. Exponential
  - e. Logarithmic
  - f. Polynomial of degree 3 or higher
  - g. Rational
  - h. Trigonometric (sine, cosine, tangent, cotangent)
3. Solving equations
  - a. Quadratic
  - b. Exponential
  - c. Logarithmic
  - d. Polynomial of degree 3 or higher
  - e. Trigonometric
4. Evaluating trigonometric functions and inverse trigonometric functions
5. Finding the partial fraction decomposition of a rational function
6. Properties of logarithms
7. Simplifying trigonometric expressions
8. Finding the difference quotient for different functions
  - a. Linear
  - b. Quadratic
  - c. Radical; simplify it by rationalizing the numerator or denominator
  - d. Trigonometric
  - e. Rational
9. Sequences and series
  - a. Finding finite sums using the properties learned in 12.1 – 12.3
  - b. Finding infinite geometric sums with common ratio between -1 and 1.
10. Proving statements using mathematical induction
11. Graphing conic sections
  - a. Circle
  - b. Ellipse
  - c. Hyperbola
12. Equations of lines, circle, half a circle.
13. Inequalities