

Test 3 Preparation

- The test covers the sections 11.1, 11.2, 11.3, 11.5 and chapter 3.
- Use the homework, class work, and class examples as a study guide. In other words, any problem from the homework, examples, or class work is fair-game on the exam.
- Memorize the following:
 - The nth term formula for an arithmetic sequence: $a_n = a_1 + (n-1)d$
 - The sum of the first n terms of an arithmetic series: $S_n = \frac{n}{2}(a_1 + a_n)$
 - The nth term formula for a geometric sequence: $a_n = a_1 r^{n-1}$
 - The sum of the first n terms of a geometric series: $S_n = \frac{a_1(1-r^n)}{1-r}$
 - The sum of an infinite geometric series: $S = \frac{a_1}{1-r}$
 - The Slope Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$ and $DQ = \frac{f(x+h) - f(x)}{h}$
 - Slope-Intercept Equation of a line: $y = mx + b$
 - Point-Slope Equation of a line: $y - y_1 = m(x - x_1)$
 - Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
 - The Remainder Theorem
 - The Factor Theorem
 - The Leading Term Test
 - Rational Zero Theorem
 - The Fundamental Theorem of Algebra
 - Conjugate Pairs Theorem
 - Even/Odd Function Test
 - rules for finding asymptotes.
 - Any other property or concept you needed to complete the homework or class work successfully.
- A well-prepared student should be able to...
 - find a specified term of a sequence given a recursive or explicit formula for a sequence. [11.1]
 - find a recursive or explicit formula for a sequence. [11.1-11.3]
 - find the nth term or nth partial sum of an arithmetic or geometric sequence. [11.2,11.3]
 - find the sum of an infinite geometric series. [11.3]
 - expand a binomial or find a given term of a binomial expansion. [11.5]
 - find the equation of a line and represent it as a linear function [11.2 HW].
 - find the slope of a line, or a difference quotient and interpret in terms of rate of change. [3.1 HW]
 - divide polynomials using long division and synthetic division. [3.1]
 - apply the remainder and factor theorems. [3.1]
 - apply the leading term test. [3.2]
 - find maxima and minima of a polynomial using the a calculator. [3.2].
 - graph polynomials. [3.2]
 - use synthetic division and the Rational Zero Theorem to find the zeros of a polynomial function and factor such a function completely. Also state the multiplicity of the zero. [3.3, 3.4]

- n) apply the Remainder Theorem, Factor Theorem, Rational Zero Theorem, Fundamental Theorem of Algebra, Conjugate Pairs Theorem. [3.3, 3.4]
- o) graph rational functions including asymptotes and other relevant info. [3.5]
- p) solve homework-type problems. Also, don't forget to study the examples from class!!!!