

## TOPICS and Concepts for the Math 141 (Pre-Calculus ) Challenge Exam

### NOTE #1:

- Math 141 is a combination and extension of both Math 104 (Trig) and Math 116 (College Algebra).
- It is incumbent upon the student to study the topics, concepts, and samples from Math 104 and Math 116 **PRIOR TO** studying the additional topics and samples listed for Math 141.

### NOTE #2:

- A calculator, cell phone, translator, dictionary or any similar device is NEVER allowed.
- NO formulas will be given.
- The problems on the 'Samples' exam contains problems similar to, but not exactly like, problems on the actual Challenge Exam. Further, the Challenge Exam may contain problems that are not expressly shown on the 'Samples' Exam.' **STUDY !!**

### The Challenge exam for Math 141 may include, but will not be limited to:

1. All topics and concepts from Math 104 (Trig).
2. All topics and concepts from Math 116 (College Algebra).

Note: The use of Matrices and Linear Programming will be minimized, but not eliminated.

3. Graphs of Rational Functions may include: vertical, horizontal or oblique asymptotes, and points of discontinuity.
4. Graphs of Trigonometric Functions may include:
  - period changes
  - Identify any y-intercepts
  - Identify any zeros, within a stated domain.
5. Graphs of exponential and logarithmic functions. Identify any zeros and y-intercepts, and all asymptotes.
6. Simplify (via factoring) expressions containing negative and/or fractional exponents.

**REMEMBER, the above topics are in ADDITION to the topics listed for Math 104 and Math 116.**