Math 1060 Midterm 1 Test Objectives
Sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4

Your exam will be "closed book" - no notes or formula cards allowed. Calculators will *NOT* be allowed on a significant portion of the test. (Calculators may be allowed for some applied problems and arithmetic intensive problems.)

Please see the suggested review problems below for guidelines on calculator use.

Chapter 1:

1) Find coterminal angles.

2) Convert units: degrees, minutes, seconds $\leftrightarrow$ decimal degrees.

3) Convert from radians to degrees and from degrees to radians.

4) Find arc length and the area of a sector.

5) Solve problems involving linear and angular speed.

6) Know how to obtain the trig functions of an angle in standard position given a point on the terminal side.

7) Know and use the reciprocal identities. Also, know $\tan\alpha = \dfrac{\sin\alpha}{\cos\alpha}$

8) Know the values of the trig functions of "common" angles: $0, \dfrac{\pi}{6}, \dfrac{\pi}{4}, \dfrac{\pi}{3}, \dfrac{\pi}{2}$

9) Know the signs of the trig functions in each quadrant.

10) Combine items 7 and 8 to find the values of the trig functions of all the "common" angles between 0 and 2π.

11) Find the trig values of angles larger than 90° using a reference angle.

12) **Solve right triangles** (including applications). This may involve the following

a) Find the length of a side of a right triangle by using the Pythagorean theorem.
b) Evaluate expressions involving inverse trig functions.

Here are some suggested review problems from chapter 1 that indicate which type of problem should be completed without a calculator.
Chapter 1 Review Exercises pp. 102 - 104
Do *not* use a calculator: 5, 9, 13, 17, 18, 19 – 38, 51 – 58, 65
Calculator is okay: 2, 7, 59, 67, 71, 75, 76, 77
Chapter 1 Test p. 105
Do *not* use a calculator: 1 – 12, 16, 19
Calculator is okay: 13, 14, 15, 17, 18, 20, 21, 22

Chapter 2:

Graph and analyze trigonometric functions (without a calculator):

1) Graph the sine and cosine functions.

2) Identify and use amplitude, period, and phase shift to graph transformations of sine and cosine.

3) Write an equation of the form y = A **sin** (B[x – C]) +D or y = A **cos** (B[x – C]) +D when given the graph of a sinusoidal function.

4) Find the frequency of sine and cosine functions. Understand the relationship between frequency and the period of the function. You should be able to find the period when given the frequency and vice versa.

5) Graph secant and cosecant functions and their transformations. Be able to state all the vertical asymptotes and identify the period.

6) Graph tangent and cotangent functions and their transformations. Be able to state all the vertical asymptotes and identify the period.

7) Know how to find the domain and range of trig functions.