Math 1060 Midterm 3 Test Objectives
5.1, 5.2, 5.3, 5.4, 5.5, 6.2, 6.3

Your exam will be "closed book" - no notes or formula cards allowed. Calculators will be allowed on this test, but you must show your work for credit.

Solve Oblique Triangles:
1) Use the Law of Sines to solve triangles—including the ambiguous case.
2) Use the Law of Cosines to solve triangles.

3) **Find the area of a triangle**.

Work with Vectors:
4) Find scalar multiples, sums, and differences of vectors algebraically and geometrically.
5) Find horizontal and vertical components of a vector.
6) Find magnitude and direction of a vector.
7) Find the dot product.
8) Find the angle between vectors.
9) Solve application problems involving vectors.

Work with Complex Numbers:
10) Find the absolute value or modulus of a complex number.
11) Graph complex numbers.
12) Given a complex number in standard form, $a+bi$, write the number in trigonometric form.
13) Given a complex number in trigonometric form, write the number in standard form, $a+bi$.
14) Find products and quotients of complex numbers using trigonometric form.
15) Find powers and roots of complex numbers using trigonometric form.

Sections 6.4 and 6.5 will be covered on the final exam. For these sections:

1) Graph points in polar form.
2) Convert coordinates: rectangular $\leftrightarrow$ polar.
3) Convert equations: rectangular $\leftrightarrow$ polar.
4) Graph polar equations (cardioid, limaçon, lemniscate, rose, lines, and circles), finding exact (r, θ) points that lie on the graph.
5) Complete a "t-x-y table" and graph a curve defined parametrically.
6) Eliminate the parameter in a pair of parametric equations.
7) Write a pair of parametric equations for a line segment given the endpoints, or a portion of a circle centered at the origin given the radius.