Outline of Spring Test 1 Topics

Algebra 2 Honors

January 28, 2011

The following are the major topics we have covered that may be on the first test. I have included a few sample Exeter problems for each topic, but there are typically others that I have not listed. Note that some problems use techniques to solve them that might not be obvious, and some problems also use a combination of more than one technique. The test will cover up to problem 43:8. Calculators will not be allowed.

1. Sinusoidal functions. Be able to graph functions of the form $a\sin(mx) + v$ and $a\cos(mx) + v$ and explain what a, m, v mean. Be able to recognize graphs in that form and write them down using the correct a, m, v. Find intercepts using symmetry. All angles will be in radians. (29:6, 30:13, 33:5, 35:8, 36:5-7, 38:6-7, 39:9-10, 40:2, 40:4, 42:5)

2. Understand the tangent graph, values at special angles, and asymptotes. Given one of sine, cosine and tangent, be able to find the other two. (28:5, 28:6, 37:2, 38:4, 40:3, 43:6)

3. Know the basic laws of exponents, as on quiz 1. (28:7, 28:9, 30:11, 33:2, 34:2, 39:11, 40:7, 42:4)

4. Exponential functions. Understand basic properties of exponential functions (both growth and decay) including asymptotes. Be able to sketch them without a calculator. Understand applications to interest rates, half life and doubling time. (38:8, 40:5-6, 41:6, 42:1, 42:6, 43:1)

5. Understand how the determinant of a matrix affects the area of the transformed unit square. (39:7-8, 43:7-8)