

Math 130-002

Final Exam Information

The comprehensive final exam is worth 150 points and is scheduled for Wednesday, December 11, 2:00pm–3:15pm. The content of the exam will be split up roughly as follows:

- about 20% from Test 1 material,
- about 20% from Test 2 material,
- about 20% from Test 3 material, and
- about 40% from recent material.

To prepare for the final exam, you should study the material from your class notes, review packets, and old tests. Focus your efforts on the following skills (which relate very closely to course outcomes). Any other skills that we have studied and developed over the semester will not be specifically assessed on the final exam.

Test 1 skills

1. Convert between degree and radian measure.
2. Know and use both the unit-circle and right-triangle approach to the trigonometric functions.
3. Know the basic properties of all six trigonometric functions: domain/range, x - and y -intercepts, period, signs in quadrants, even-odd properties, graphs.
4. Use reference angles to determine values of trigonometric functions.
5. Sketch the graph of $y = d + a \sin(bx - c)$ and $y = d + a \cos(bx - c)$.

Test 2 skills

1. Know how the inverse trig functions are defined. Find exact angles for common trigonometric values.
2. Simplify expressions involving trig/inverse trig functions.
3. Be able to establish basic trigonometric identities.
4. Solve straight-forward trigonometric equations.
5. Solve problems involving right triangles, including word problems.

Test 3 skills

1. Be able to use the trig formulas: sum and difference, double-angle and half-angle, product-to-sum and sum-to-product. You WILL be allowed to use your trig formula card.
2. Solve straight-forward trigonometric equations.

3. Solve problems involving the law of sines (including word problems).
4. Solve problems involving the law of cosines (including word problems).
5. Plot complex numbers in the complex plane.
6. Write complex numbers in polar form.
7. Multiply and divide complex numbers in polar form.

Recent skills

1. Use Demoivre's Theorem to find powers of a complex number.
2. Find the n th roots of a complex number.
3. Evaluate and graph exponential functions.
4. Convert between logarithmic and exponential notation.
5. Evaluate and graph logarithmic functions.
6. Use properties of logarithms to simplify, expand, and condense expressions.
7. Apply the change-of-base formula.
8. Solve exponential or logarithmic equations.
9. Solve application problems involving exponential and logarithmic functions.