

Math 150 Exam 3 Concepts and Skills

Sections 6.1-6.5, 7.1-7.5, 8.4-8.5

1. Be able to convert from degree to radian measure and from radian to degree measure.
2. Be able to find angles coterminal with a given angle.
3. Be able to work with arc length and sectors of circles, finding information given different parts.
4. Be able to use right triangle trigonometry to solve for angles and sides of right triangles.
5. Be able to sketch a triangle, solve it, and use it to find trig ratios, given any one trig ratio or two sides of the triangle.
6. Be able to solve a right triangle, given any side and angle or two sides.
7. Know the Unit Circle and be able to use it to obtain exact values of trig functions and to find angles in degrees or radians, given any trig value.
8. Be able to find the reference angle in radians and degrees for any given angle.
9. Know the formula for area of a triangle (right and non-right) and be able to use it.
10. Be able to find the quadrant in which an angle lies, given various information.
11. Know what an angle of depression, angle of elevation, and angle of inclination means and be able to solve applications involving any of them.
12. Know the Law of Sines and Law of Cosines and be able to use them to solve any given triangle.
13. Be able to solve applications involving Law of Sines and/or Law of Cosines.
14. Know Heron's formula and be able to use it to find the area of a triangle.
15. Know the Reciprocal Identities, Pythagorean Identities, Even-Odd Identities, Cofunction Identities, and Double-Angle Identities and be able to use them to simplify expressions, prove trigonometric identities, and solve problems.
16. Be able to apply the Addition and Subtraction Formulas, Half-Angle Formulas, and Lowering Powers Formulas to prove trigonometric identities, rewrite expressions, and solve problems.
17. Know the graphs, domains, and ranges of the inverse trigonometric functions.
18. Be able to use the inverse trigonometric functions to find angle values, exact (from the unit circle) and rounded (from the calculator).
19. Be able to solve trigonometric equations, including using factoring, trig identities, and inverse trig functions.
20. Be able to graph the sum or difference of two trig functions (by hand).
21. Understand vectors and be able to sketch them, multiply by a scalar, add and subtract them, express in different forms, find the magnitude and direction, find horizontal and vertical components, and solve applications of vectors.
22. Know what the dot product is and be able to find it and the angle between two vectors.
23. Be able to determine whether two vectors are orthogonal.