

Math 150 Exam 1 Concepts and Skills

Sections 1.1-1.10, 2.1-2.8

1. Know the types of real numbers and be able to work with absolute values and interval notation.
2. Know the laws of exponents and be able to use them to simplify expressions.
3. Be able to simplify radicals and rationalize numerators and denominators.
4. Know and be able to use the distance formula and midpoint formula.
5. Be able to multiply and factor polynomials.
6. Be able to simplify, add, subtract, multiply, and divide algebraic fractions.
7. Be able to solve linear equations, quadratic equations, equations with algebraic fractions, equations with radicals, equations of quadratic form, and equations that can be factored into linear or quadratic factors.
8. Be able to complete the square, use the quadratic formula, and use the Discriminant to determine the number and type roots of a quadratic equation.
9. Be able to set up and solve applications involving the types of equations listed in #6.
10. Be able to solve inequalities (linear, quadratic, radical, absolute value, fractional).
11. Know how to set up and solve applications involving inequalities.
12. Be able to find the equation of line given various information, using the point-slope formula.
13. Be able to determine intervals where a function is increasing or decreasing and find average rates of change over an interval.
14. Be able to graph parent functions and use transformations to graph variations.
15. Be able to graph piece-wise functions.
16. Know how to determine whether a function is odd or even or has symmetry and use that to aid in graphing the function.
17. Be able to find domain, range, and maximums or minimums of quadratic functions by writing the function in vertex form and find maximums and minimums of other functions using the graphing calculator.
18. Know how to find sums, difference, products, quotients, and composite functions and their domains and to break down a composite function.
19. Understand the definition of function, 1-1 function, and inverse function and find inverse functions graphically and algebraically.