

Math 095 Course Objectives

The number of final exam questions corresponding to each objective is indicated in bold.

1. Determine whether a relation is a function. Given a graphical, tabular, or algebraic representation for a function, evaluate the function and find its domain and range. **(3)**
2. Given the graph of a line, an equation of a line, or two points on a line, find the slope and y -intercept of the line. **(2)**
3. Find equations of lines in slope-intercept or point-slope form. Find equations of horizontal or vertical lines. Determine whether lines are parallel, perpendicular, or neither. **(3)**
4. Determine whether a system of two linear equations in two variables has no solution, exactly one solution, or infinitely many solutions. Solve systems of two linear equations in two variables by using substitution, elimination, or graphical methods. **(3)**
5. Solve application problems that require setting up and solving a system of two linear equations in two variables. **(2)**
6. Find unions and intersections of intervals. Sketch the graph of an interval. Convert between interval notation and inequality notation. **(1)**
7. Solve compound linear inequalities in one variable. Solve application problems that require setting up and solving linear inequalities in one variable. **(2)**
8. Solve linear absolute-value equations. **(2)**
9. Solve linear absolute-value inequalities. Graph solutions on the number line, write solutions as inequalities, write solutions in interval notation, and write solutions in set-builder notation. **(2)**
10. Solve inequalities and systems of inequalities in two variables. Sketch the graphs of the solution sets. **(1)**
11. Convert expressions involving rational exponents to radical expressions and vice versa. **(1)**
12. Simplify radical expressions where the radicand is a monomial. **(2)**
13. Add, subtract, and multiply radical expressions. Simplify the results. [The expressions may consist of sums or differences of radicals. Only monomial radicands are considered.] **(2)**
14. Divide radical expressions and rationalize denominators. [Only monomial radicands are considered.] **(1)**
15. Solve radical equations where the radicand is a linear expression. **(2)**
16. Simplify complex numbers and write in standard form $a + bi$. [Students must be prepared to add, subtract, multiply, and divide complex numbers, as well as write square roots of negative numbers in complex form.] **(2)**
17. Solve all types of quadratic equations, including those with complex solutions. Solve rational equations that reduce to quadratic equations. **(2)**

18. Solve application problems that require setting up and solving quadratic equations. [Students should be prepared to use simple geometric formulas such as those giving the areas of rectangles and triangles.] **(2)**
19. Graph quadratic functions. Find vertices and x - and y -intercepts of parabolas. **(2)**
20. Solve application problems involving the Pythagorean theorem. **(1)**
21. Solve application problems involving direct and inverse variation. **(1)**
22. Use substitution to solve polynomial equations that reduce to quadratic equations. **(1)**

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Do not use obsolete objectives!