

EXAM 4 MATERIAL AND EXPECTATIONS

For the exam, you should be able to do the following things:

Section 3.1.

- Given a function, determine its domain
- Given a function, evaluate it at given values
- Given a function, evaluate it at given algebraic expressions, and simplify
- Use the leading term of a general polynomial function to determine its “basic shape”
- Use the factoring techniques of Chapter 1 to find the x -intercepts of some higher-degree polynomial functions
- Determine behavior of graph of a higher-degree polynomial function between x -intercepts by making a table
- Use this information to sketch the graph of a higher-degree polynomial function

Section 3.2.

- Sketch the graph of a function by plotting points, including piecewise-defined functions
- From the graph of a function, determine the domain and range of the function
- Use the vertical line test to determine whether a curve is the graph of a function

Section 3.3.

- Solve problems on cost, revenue, and profit with break-even analysis,
- Solve problems on supply and demand curves, finding the equilibrium point

Section 3.4.

- Find the vertex of a quadratic function
- Given the vertex of a quadratic function and another point on the graph, write the formula for the function
- Find all x -intercepts and y -intercepts of the graph of a quadratic function
- Use the vertex, x -intercepts, and y -intercepts to sketch the graph of a quadratic function
- Solve word problems that involve quadratic functions