

## ALGEBRA FOR CALCULUS Topics List for Chapter 1 & 2 Exam

### Section 1.2

- Given a correspondence, decide whether or not it is a function; like 1 – 20 on pp. 86-87
- Explain why the Vertical Line Test works
- Read function values from a graph
- Find function values given a function formula
- Find domain of given function, from a set of points, from a graph, and from a function rule
- Interpret function values in a word problem, like # 81 – 83 p.90

### Section 1.3

- Find slope given two points
- Find and interpret slope in context, like # 41-48 on pp. 104-105
- Use function notation to interpret and express linear relationships from context, like #71 – 80 on pp. 105 - 106

### Section 1.4

- Find slope and y-intercept given linear function
- write equation for line given two points
- write equation for linear function given two points
- write equation for line parallel or perpendicular to given line
- write equation for line given information in context; like #61 – 66 on pp. 119 – 120

### Section 2.1

- Given graph of a function, identify intervals over which the function is increasing, decreasing, or constant
- Given a function rule defined piecewise, determine function values
- Given a function rule defined piecewise, hand sketch its graph
- Given a graph of a piecewise function, write its function rule

### Section 2.2

- Given the graphical representations of two functions F and G, find the domain of each function and the domains of  $F + G$ ,  $FG$ ,  $F/G$ ,  $G/F$ , and sketch  $F + G$ ,  $F - G$ ,  $G - F$ ; like # 33 – 38 on pp. 177-78
- Given two formulas that define functions (linear, quadratic, cubic or rational), find their sum, difference, product, and quotient and the corresponding domains.
- Given a function defined by a formula (linear, quadratic, cubic, or rational function), find the difference quotient  $\frac{f(x+h) - f(x)}{h}$
- Given the graphical representation of a function, explain what the difference quotient means.

**Section 2.3**

- Given two functions defined by formulas, find their composition and also the domain of their composition

**Section 2.4**

- Determine visually whether a graph is symmetric with respect to the  $x$ -axis,  $y$ -axis, and/or the origin. (# 1 – 6 p. 206)
- Perform the algebraic tests to determine symmetries of a function. (#15 - 26 p. 206)
- Given the graph of a function, determine visually whether the function is even, odd, or neither. (#33-38, p. 206)
- Perform the algebraic test to determine whether a function is even, odd, or neither. (#39 - 48 pp. 206-07)
- Translations of graphs: problems like 49 – 84 on p. 207; also write a function like # 97 - 106; also translations like 107 – 118.

**MyLabsPlus has a set of practice HW problems (under the “homework” tab) and a practice exam (under the “Test and Quizzes” tab). The more problems you do, the better prepared you will be! Also, working through the MLP practice exam will simulate the time pressure of the real thing. Study hard!**