

---

# Weeks 15-16-17: Summary

Mathematics 69.102  
Fall-Winter, 2001-2002

Instructor: Angelo Mingarelli

## Integration

- Curve sketching in cartesian coordinates requires patience and practice. You should review the *sign decomposition table* technique (Chapter 5.1-2) for determining the sign of polynomials and rational functions on various intervals. It is very useful for finding where a given function is increasing or decreasing (concave up or down) without going through the arduous task of looking at numerous explicit cases.
- As pointed out in class the “Pizza” rule is just a mnemonic device for remembering what you should be looking for when you are drawing the graph of a given function. See Example 249 (latest ed.) for questions to ask when attempting to sketch the graph of a given function.
- Note that a function is said to be “even” if  $f(-x) = f(x)$ , or in other words, replacing  $x$  by “ $-x$ ” doesn’t change the value of the function. In this case, the graph of the function is symmetric with respect to the  $y$ -axis (see p.248 for more info. on this). Work out Homework Set 17.
- Polar coordinates notes are online, further exercises are TBA.
- Arc length notes are from the text, Chapter 9.4. Work out Homework Set 32.
- Exercises on parametric representations of curves are TBA.
- **NOTES:**