

Intro to Calculus

Replacement Assignment 2

You have worked on a number of absolute value problems. This replacement assignment gives you the opportunity to push these ideas further. When working towards solutions of the problems below I want you to base your work on the “distance between two points” interpretation of absolute value-- not just a strictly algebraic, nor just a plug in numbers until you get something to work approach.

Problem 1—A string of three absolute value inequalities.

- Solve $|x - 3| < |x - 5| < |x + 3|$. Justify using the “distance between points” interpretation of absolute value.
- Generalize: How do problems like the one above compare to problems we have already done? What general techniques for solving these sorts of problems would you suggest.

Problem 2— What if the coefficient was not 1?

- Solve $|x - 3| = 8$ and $|2x - 3| = 8$. How do the answers compare? Use a number line to help explain.
- Generalize: How do problems like the one above compare to problems we have already done? What general techniques for solving these sorts of problems would you suggest.