Infinite Limits Study Group Activity
(Groups of 3 or 4 people)

Purpose of activity: Gain a deeper understanding of infinite limits and limits at infinity by solving a problem on your own and then teaching it to your peers.

Due Date: Monday September 10th.

Individual Portion: Everybody in the group should choose ONE of the problems below. Solve your problem on your own before you meet with your group.

$$\lim_{x \to \infty} \left(\sqrt{x^2 + 1} - x \right)$$

$$\lim_{x \to -\infty} \sqrt{x^2 + x + 1} + x$$

$$\lim_{x \to 3} \frac{(x + 2)(x - 3)^2(x - 4)^3}{x(x - 1)(x - 2)^2}$$

Sketch a graph of a function satisfying the three properties below.
   a) $f(1) = 3$
   b) $\lim_{x \to 1^-} f(x) = \infty$
   c) $\lim_{x \to 1^+} f(x)$ exists

Group Portion: Take turns teaching your problem to the rest of the group. Use a whiteboard to clearly show each step to your groupmates. Record your teaching using a phone or camera.

Assessment: Upload your video to Blackboard.