Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals
TRENT UNIVERSITY, Fall 2025
Workshop Problems for 2025-09-19

In case they run out of questions, here are some problems (similar to what may appear on the test next week) that you can use for practice in the workshops.

- Find the x-intercepts (if any) and the location of the tip of the parabola $y = x^2 - 2x - 24$. *[x-intercepts at $x = -4$ and $x = 6$ and tip at $(1, -25)$.]*

- Use the ε–δ definition of limits to verify that $\lim_{x \to -2} (3x + 2) = -4$. *[$\delta = \varepsilon/3$ (or less)]*

- Use the ε–δ definition of limits to verify that $\lim_{x \to 1} (x - 1)^2) = 0$. *[$\delta = \sqrt{\varepsilon}$ (or less)]*

- Use the practical rules for computing limits to evaluate $\lim_{x \to 2} \dfrac{x^2 - x - 2}{x^2 - 5x + 6}$. *[$= -3$]*

- Use the practical rules for computing limits to evaluate $\lim_{x \to -1} \dfrac{x^2 + 5x + 4}{2x^2 - 8x - 10}$. *[$= \frac{1}{4}$]*

- Use the practical rules for computing limits to evaluate $\lim_{x \to 0} \dfrac{x^2 + 3x}{x^3 + 4x^2 + 17x}$. *[$= \frac{3}{17}$]*