MAT 17A Winter 2026
Homework 3
Due before 10:00 AM on Wednesday, January 28

Please write the homework solutions in connected sentences and explain your work. Mark the answers to each question. Scan or take pictures of your homework and upload it to Gradescope before due time.

1. (10 points) Compute the limit $\lim_{x \to \infty} \frac{x^2 - 4x}{x^2 - 3x - 4}$.

2. (10 points) Compute the limit $\lim_{x \to 0} \frac{x^2 - 4x}{x^2 - 3x - 4}$.

3. (10 points) For the function $f(x) = \frac{x^2 + 2}{x^2 - 1}$:
  a) Find the domain.
  b) Find the vertical asymptotes.
  c) Find the horizontal asymptotes.