## MAT125, Paper Homework 2

1. Calculate

$$\lim_{x \to 0} \left( \frac{1}{x} - \frac{1}{x^2 + x} \right),\,$$

if it exists. (If the limit doesn't exist, explain.)

- 2. Let  $F(x) = \frac{x^2 4}{|x 2|}$ .
  - (a) Compute  $\lim_{x\to 2^+} F(x)$  and  $\lim_{x\to 2^-} F(x)$ .
  - (b) Does  $\lim_{x\to 2} F(x)$  exist? Justify your answer, and sketch the graph of F(x).