

MAT 21A, Fall 2021
Homework 2

Due before 2:10 on Wednesday, October 6

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. Compute the limit:

$$\lim_{x \rightarrow 0} \frac{\frac{1}{x-1} + \frac{1}{x+1}}{x}.$$

2. Compute the limit:

$$\lim_{x \rightarrow 1} \frac{x^2 - x}{x^2 - 3x + 2}.$$

3. If $2 - x^2 \leq g(x) \leq 2 \cos x$ for all x , find $\lim_{x \rightarrow 0} g(x)$

4. Compute the one-sided limits:

a)

$$\lim_{x \rightarrow 1^+} \frac{\sqrt{2x}(x-1)}{|x-1|}.$$

b)

$$\lim_{x \rightarrow 1^-} \frac{\sqrt{2x}(x-1)}{|x-1|}.$$