Math 1496 Calc 1 - Fall 2023 - Homework #2

Pg. 79, #5, 6, 8, 10, 11, 13, 15, 17

Pg. 80, #27, 31

Pg. 91, #47, 51, 53,

Pg. 79. In these exercises, complete the table and determine the limit

#5 $\lim_{x\to 4} \dfrac{x-4}{x^2-5x+4}$

x	3.9	3.99	3.99	?	4.001	4.01	4.1
$f(x)$							

#6 $\lim_{x\to 0} \dfrac{\sqrt{x+1}-1}{x}$

x	-0.1	-0.01	-0.001	?	0.001	0.01	0.1
$f(x)$							

#8 $\lim_{x\to 0} \dfrac{\cos x - 1}{x}$

x	-0.1	-0.01	-0.001	?	0.001	0.01	0.1
$f(x)$							

#10 $\lim_{x\to 0} \dfrac{\ln(x+1)}{x}$

x	-0.1	-0.01	-0.001	?	0.001	0.01	0.1
$f(x)$							

In the following, evaluate both numerically and graphically.

#11 $\lim_{x\to 2} \dfrac{x-2}{x^2+x-6}$ #13 $\lim_{x\to 1} \dfrac{x^4-1}{x^6-1}$

#15 $\lim_{x\to -6} \dfrac{\sqrt{10-x}-4}{x+6}$ #17 $\lim_{x\to 0} \dfrac{\sin 2x}{x}$

Pg. 80, #27, 31 - pictures are in the book

Pg. 91, #47, 51, 53, Find the limits analytically.

#47 $\lim_{x\to 0} \dfrac{x}{x^2-x}$ #51 $\lim_{x\to -3} \dfrac{x^2+x-6}{x+3}$ #53 $\lim_{x\to 4} \dfrac{\sqrt{x+5}-3}{x-4}$

Due: Friday Sept. 8, 2023