Section 9.2 Solution 21, 35, 39

#21] $f(x) = \frac{x^2+x-2}{x-1} = \frac{(x-1)(x+2)}{x-1}$

A) $\lim_{x\to 1^-} f(x) = \frac{1+1-2}{1-1} = \frac{0}{0}$ indeterminate, use factorization

$\lim_{x\to 1^-} \frac{(x-1)(x+2)}{x-1} = 1+2 = 3$

B) $\lim_{x\to 1^+} x+2 = 3$

C) $\lim_{x\to 1} x+2 = 3$

#35]

$f(x) = \frac{5x^2+11}{7x-2}$

A) $f(20) = 14.572$

B) $f(50) = 39.951$

C) $\lim_{x\to\infty} f(x) = \lim_{x\to\infty} \frac{5}{7}x = \infty$

#39] $f(x) = \frac{10-7x^3}{4+x^3}$

A) $f(-10) = -7.038$

B) $f(-20) = -7.005$

C) $\lim_{x\to-\infty} f(x) = \lim_{x\to-\infty} \frac{-7}{1} = -7$