Please answer the questions below. I prefer to have your file scanned and saved as a single pdf and submitted to Blackboard.

Name the pdf file: `hw05_math413_lastname.pdf` with "lastname" of course replaced by your last name.

1. Let $f(x) = \frac{10x+3}{5x-2}$. Prove that $\lim_{x \to \infty} f(x) = 2$. Use Definition 3.1.1 directly, but no other results after it from 3.1.

2. Let $f(x) = \frac{x^3 - 2x^2 + x + 7}{2x - 1}$. Prove that $\lim_{x \to \infty} f(x) = +\infty$. Use Definition 3.1.9 directly, but no other results after it from 3.1.

3. Section 3.2, Exercise 1(a).

4. Section 3.2, Exercise 8.