

1. Using the definition of the derivative, compute the derivative of $f(x) = \frac{x}{2x+1}$, i.e., compute the limit $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$.

2. List all the differentiation rules presented in section 3.3 of the textbook.

3. Compute the derivative of $f(x) = \frac{x}{2x+1}$ using differentiation rules.

Which method is easier compared to computing the derivative using the definition (question 1)?