# How to Write Math in the Discussions Using MathJax

Coursera uses MathJax, and math is written using LaTeX syntax, enclosed in double-dollar signs. For example,

```
$$a_1b_2 - a_2b_1$$
```

will look to the reader like

$$a_1b_2 - a_2b_1.$$

For those of you who don't know LaTeX, I will show you how to write some math expressions that you can use to model your mathematical writing. For a more general overview of the syntax, you may refer to

https://math.meta.stackexchange.com/questions/5020/mathjax-basic-tutorial-and-quick-reference

Here are a selection of some sample math expressions from this course. Remember to add the double-dollar signs to the math expressions (not added here to prevent MathJax from translating).

(1)

\displaystyle x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

(2)

\displaystyle f(r-\epsilon_n) = -\epsilon_n f'(r) + \frac{1}{2}\epsilon_n^2f''(r)+\dots

$$f(r - \epsilon_n) = -\epsilon_n f'(r) + \frac{1}{2}\epsilon_n^2 f''(r) + \dots$$

(3) (*Note that MathJax requires the math expression to be all on one line without any returns*)

\begin{pmatrix}

\epsilon &\phantom{-}2 &\phantom{-}4\\1 &-1 &\phantom{-}1