Math Review (Chapter 1)

(I): College algebra and some basic calculus. For example:

(1) Relating graphs to equations (e.g., $y = ax + b$ is a straight line).

(2) The derivative of $f(x) = ax$ is $\dfrac{df}{dx} = ax^{-1}$.

(3) The derivative of $f(x) = a + bx - cx^2$ is $\dfrac{df}{dx} = b - 2cx..$

(II): Basic course in economics.

(1) Use of graphs for economic analysis.

(2) Basic optimization. For example:

If x = output, P = output price, a firm's cost function is

$c(x) = ax$, > 1, and the firm's profits are given by

$= Px - ax$, then a profit-maximizing firm will

operate where $P = ax^{-1}$, implying input demand

$$x = \frac{P}{a}^{\frac{1}{-1}}.$$

If you are a bit rusty, don't be intimidated. We will progress gradually with the mathematical analysis.