In-Class Exercise: Derive Taylor's rule:

STUDENT NAME:

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In the chapter Mathematics Recapitulation, we derive Taylor's rule. At some point in the derivation, we make a rather large leap, it is your job to fill in how the top equation became the bottom equation.

$$f(a+h) \approx f(a) + \int_a^{a+h} \left[f'(a) + (x-a) f''(a) \right] dx \tag{1}$$

Since $f(a)$ and its derivatives are constant values, we can integrate this equation with respect to x leading to:

$$f(a+h) \approx f(a) + h f'(a) + \frac{h^2}{2} f''(a) \tag{2}$$

Show that this is indeed correct, you can write it out in your handout, rip out the page and hand it in.