

**Problem statement** Compute

$$\lim_{x \rightarrow 0} \frac{(\sin 3x - 3x)^2}{(e^{2x} - 1 - 2x)^3}.$$

Use Maclaurin series (Taylor series centered at 0) that you know, instead of L'Hôpital's Rule. How many times would you have had to apply L'Hôpital's Rule if you used it? (Don't try it! Look at the Maclaurin series to tell.)