

Quiz 5

- a) Find the Taylor series, centered at 1, for the function e^{x-1} .
- b) Using part (a) calculate the limit

$$\lim_{x \rightarrow 1} \frac{e^{x-1} - x}{(x-1)^2}$$

Hint: Recall that

$$e^x = \sum_{n=0}^{+\infty} \frac{x^n}{n!} = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$$

Explain your answer.