

MA1E01: Tutorial week 4

REMEMBER TO HAND BEFORE THE TUTORIAL STARTS

- Computation of limits.

Problem 1 *Show that if*

$$\lim_{x \rightarrow a} f(x) = L_1 \quad \text{and} \quad \lim_{x \rightarrow a} g(x) = L_2 . \quad (1)$$

then

$$\lim_{x \rightarrow a} [f(x)g(x)] = L_1 L_2 . \quad (2)$$

Problem 2 *Compute the following limits*

1. $\lim_{x \rightarrow 1} \frac{3x-3}{x+1}$
2. $\lim_{x \rightarrow 1} \frac{3x-2}{x-1}$
3. $\lim_{x \rightarrow 1} \frac{\sqrt{x+3}-2}{x-1}$

Problem 3 *Compute the following limits*

1. $\lim_{x \rightarrow 1} \frac{3x-3}{x-1}$
2. $\lim_{x \rightarrow 1} \frac{\sqrt{x^2+3}-2}{x-1}$