

# MA1E01: Tutorial week 3

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## REMEMBER TO HAND BEFORE THE TUTORIAL STARTS

- Inverse functions.
- Computation of limits.

**Problem 1** Find the inverse of the following functions when they exists

1.  $f(x) = \sqrt[3]{x^3 + 5}$

2.  $f(x) = \sqrt{x - 1}$

3.  $f(x) = \sqrt{x^2 + 1}$

**Problem 2** Find the inverse of the following functions when they exists

1.  $f(x) = \sqrt[5]{x^3 - 1}$

2.  $f(x) = \sqrt{x^3 - 27} - 1$

3.  $f(x) = \sqrt{x^2 - 2x + 1}$

**Problem 3** 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 4** Compute the following limits

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

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