

Limit and Continuity

Example

By use of definition of limit, show that

$$\lim_{x \rightarrow 2} (4x - 5) = 3.$$

$$f(x) = 4x - 5 \quad l = 3.$$

$$|f(x) - l| = |4x - 5 - 3| = |4x - 8| = 4|x - 2|$$

$$|f(x) - l| < \epsilon$$

$$\text{when } 4|x - 2| < \epsilon \Rightarrow |x - 2| < \epsilon/4 = \delta$$

$$|f(x) - l| < \epsilon \quad \text{When} \quad |x - 2| < \delta$$

$$|4x - 5 - 3| < \epsilon \quad \text{When} \quad |x - 2| < \delta$$

By def. of limit

$$\lim_{x \rightarrow 2} (4x - 5) = 3.$$

Hence Proved.



OMG { MATHS }
The poetry of logical ideas.