LINEARITY PROPERTIES OF DERIVATIVE OF FUNCTIONS ON METRIC SPACE

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ABSTRACT

This research aims are to make a new definition of derivative of a function on metric space, to investigate its linearity, and to find out the influence of triangle inequality to its linearity property.

This research use a literature review method. The reviewed topics are derivative, metric space, and limit function. Based on these terms definitions, we made a new definition of derivative of a function on metric space. We observe any condition in order to make the derivative operator becomes linear.

The result is a definition of quasi-derivative of a function on metric space which is an extension of ordinary derivative definition. The linearity property is valid for the quasi-derivative operator if the metric is induced by norm. And, the triangle inequality of the metric only contribute to its linearity proof.

Kata Kunci: *quasi-derivative, function on metric space, linearity, metric induced by norm.*