

- (1) complete
- (2) close point
- (3) interior
- (4) metric space
- (5) topological space
- (6) $\lim_{n \rightarrow \infty} x_n$
- (7) $\lim_{x \rightarrow a} f(x)$
- (8) Uniformly continuous function.
- (9) ball compact
- (10) metric space topology.

Let (X, d) be a metric space.

Let (a_1, a_2, \dots) be a sequence in X .

Prove that if (a_1, a_2, \dots) converges then (a_1, a_2, \dots) is Cauchy.