[M5]

Given a non-empty set M, if $d(\cdot, \cdot)$ is a distance function on M then

(i) $d: M \times M \to [0, \infty)$

(ii) $d(x, y) = 0$ iff $x = y$

symmetry (iii) $d(x, y) = d(y, x)$

Is this sufficient?

Suppose $d(x, y)$ denotes the distance along the shortest path from x to y. Then