## Definition: Open Ball Let (M,d) be a metric space, an open ball of radius $\varepsilon > 0$ :

Let (M,d) be a metric space, an open ball of radius  $\varepsilon > 0$ :  $B(x,\varepsilon) \stackrel{\text{def}}{=} \{y : d(x,y) < \varepsilon\}$