• Observamos que se cumple la desigualdad triangular.

$$d(x,y) = \alpha d_1(x,y) + (1-\alpha) d_2(x,y)$$

$$\leq \alpha (d_1(x,z) + d_1(z,y)) + (1-\alpha) d_2(x,y)$$

$$\leq \alpha (d_1(x,z) + d_1(z,y)) + (1-\alpha)(d_2(x,z) + d_2(z,y))$$

$$= \alpha d_1(x,z) + (1-\alpha) d_2(z,y) + \alpha d_1(z,y) + (1-\alpha) d_2(z,y)$$

$$= \underline{d(x,z) + d(z,y)} \checkmark$$

Luego, d es métrica!