1.

The 3 conditions for distance formula, the triangle inequality is not satisfied.

Distance from (0,0) to (0,1) = (|(0 – 0)| + |(0 - 1)|)3 = 1

Distance from (0,1) to (1,1) = (|(0 – 1)| + |(1 - 1)|)3 = 1

Distance from (0,0) to (1,1) = (|(0 – 1)| + |(1 - 1)|)3 = 0

d(1,1) <= d(0,1) + d(1,0) – not true

The distances do not satisfy the triangle inequality.

2.

a) (.6 \* 0.05) + (.3 \* 0.06) + (.1 \* 0.08) = 0.056

b) .6\*.05 = 0.03

c) 0.3\*.06 / (Part A -> 0.056) = 0.32

d)

Check for independence: P (being defective ∩ coming from B) = P ( being defective ) \* P ( coming from B ) if this is true then they are independent

0.03≠0.056\*0.3

Since it is not true, then they are dependent events.