6. Consider the following relations that are all relations on A (i.e. A ↔ A) where A = {a, b, c, d}. Indicate which properties each relation has by circling the property names the relation possesses.

a) for {(a,a), (a,b), (d,c)}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymmetric
- o Transitive

b) for {(a,d), (d,a)}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymetric
- o Transitive

c) for {(a,d), (a,b), (c,c)}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymetric
- o Transitive

d) for {(a,b), (b,a), (d,d)}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymetric
- o Transitive

e) for {}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymetric
- o Transitive

f) for {(a,c), (c,a), (c,c), (a,a)}

- o Reflexive
- o Irreflexive
- o Symmetric
- o Asymmetric
- o Antisymetric
- o Transitive

7. Consider the relation R = {(a, c), (a, d), (c, a), (d, b), (d, d)} over the set A = {a, b, c, d}.

a) Give the matrix for R.

b) Give the matrix for R^2.

c) Does $R^2 \subseteq R$ hold? What can you thus