2. Entailment

2.1.1

Yes, and this is the derivation:

1. sim:Marge fam:hasSpouse sim:Homer – P
2. fam:hasSpouse rdfs:domain foaf:Person – P
3. sim:Marge rdf:type foaf:Person – rdfsX, 1, 2

2.1.2

Yes, and this is the derivation:

1. fam:hasSister rdfs:subPropertyOf fam:hasSibling – P
2. fam:hasSibling rdfs:subPropertyOf fam:isRelativeOf – P
3. fam:hasSister rdfs:subPropertyOf fam:isRelativeOf – rdfsX, 1, 2

2.1.3

No.

2.1.4

No.

2.1.6

No.

2.1.7

Yes, and this is the derivation:

1. sim:Lisa fam:hasParent [] .
2. [] a foaf:Person .
3. [] fam:hasSister sim:Patty .
4. sim:Patty rdf:type foaf:Person . – rdfsX, 1, 2, 3