```
1a) R1 ∪ R2
(1, 4)
(1, 3)
(1, 1)
(1, 2)
(3, 3)
(2, 2)

1b) R1 ∩ R2
(1, 1)

1c) R1 − R2
(3, 3)
(2, 2)

1d) R2 − R1
(1, 4)
(1, 3)
(1, 2)

2. Display S ∘ R...
[[1, 1, 0, 0],
 [0, 1, 1, 0],
 [1, 1, 0, 0],
 [0, 0, 0, 0]]

3. For R = {(1, 1), (1, 4), (2, 3), (3, 1), (3, 4)}, show R2.
[[1, 0, 0, 1],
 [1, 0, 0, 1],
 [1, 0, 0, 1],
 [0, 0, 0, 0]]

4a) Show R as a set of ordered pairs.
(-6, 6)
(3, -3)
(5, -5)
(-5, 5)
(-10, 10)
(-3, 3)
(-8, 8)
(-2, 2)
(4, -4)
(7, -7)
(0, 0)
(-9, 9)
(9, -9)
(1, -1)
(6, -6)
(2, -2)
(10, -10)
(-1, 1)
(8, -8)
(-7, 7)
(-4, 4)

4b) Show whether R is reflexive or not. false
Diagonal: [0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0]

4c) Show whether R is reflexive or not: true
No point disproving symmetry

4d) Show whether R is antisymmetric or not: false
Disproven by points: (-10, -10) = (-10, -10)
```