Homework 5

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**Problem 4**

1. Second is a subset of the first
2. Second is a subset of the first
3. Neither

**Problem 10**

1. T
2. T
3. F
4. T
5. T
6. T
7. F

**Problem 22**

Assume P(A) = P(B), then all elements in P(A) and P(B) hence, A = B.

**Problem 32**

1. AxBxC = { (a,x,0), (a,x,1), (a,y,0), (a,y,1), (b,x,0), (b,x,1), (b,y,0), (b,y,1), (c,x,0), (c,x,1), (c,y,0), (c,y,1) }
2. CxAxB = { (0,a,x), (0,a,y), (0,b,x), (0,b,y), (0,c,x), (0,c,y), (1,a,x), (1,a,y), (1,b,x), (1,b,y), (1,c,x), (1,c,y) }

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**Problem 4**

1. {a, b, c, d, e, f, g, h}
2. {a, b, c, d, e}
3. Ø
4. {f, g, h}

**Problem 16**

1. (A∩B) = {x|x is in A and B} ⊆ {x|x is in A} ⊆ A.
2. A = {x|x is in A} ⊆ {x|x is in A or B} = (A∪B).
3. A-B = {x| x is in A and not in B} ⊆ {x|x is in A} ⊆ A
4. A∩(B −A) = A∩(B∩A̅) = (A∩ A̅)∩B = ∅∩B = ∅
5. A∪(B –A) = A∪( B∩A̅) = (A∪B) ∩ (A∪A̅) = (A∪B) ∩ U = A∪B

**Problem 26**

See attached paper.