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Assignment: Section 2.1: 8, 10, 14, 18, 20,32 ( Edition - 7)

8.

a) no

b) no

c) yes

d) yes

e) yes

f) no

10.

a) true

b) true

c) false

d) true

e) true

f) true

g) false

14.

A

B

A

A

C

U

18. Let:

        A = 

        B = {}

    Now ∅ ϵ {∅} and ∅ ⊆ {∅}

So, A ϵ B and A ⊆ B.

a) |*ϕ*| = 0

b) |{*ϕ*}|= 1

c) |{*ϕ*, {*ϕ*}}|= 2

d) |{*ϕ*, {*ϕ*}, {*ϕ*, {*ϕ*}}}|= 3

32.

a) { ( 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 ) }

b) { ( 0, x, a ), ( 0, x, b ), ( 0, x, c ), ( 0, y, a ), ( 0, y, b ), ( 0, y, c ),  
  ( 1, x, a ), ( 1, x, b ), ( 1, x, c ), ( 1, y, a ), ( 1, y, b ), ( 1, y, c ) }

c) { ( 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 ) }

d) { ( x, x, x ), ( x, x, y ), ( x, y, x ), ( x, y, y ),  
  ( y, x, x ), ( y, x, y ), ( y, y, x ), ( y, y, y ) }