Section 2.1: 8, 10, 14, 18, 20, 32

8)

a). {x ∈ R|x is an integer greater than 1}

No.

b). {x ∈ R|x is the square of an integer}

No.

c). {2, {2}}

Yes.

d). {{2}, {{2}}}

Yes.

e). {{2}, {2, {2}}}

Yes.

f). {{{{2}}}}

No.

10)

a). ø ∈ { ø }

True.

b). ø ∈ { ø, { ø }}

True.

c). { ø } ∈ { ø }

False.

d). { ø } ∈ {{ ø }}

True.

e). { ø } ⊂ { ø, { ø }}

True.

f). {{ ø }} ⊂ { ø, { ø }}

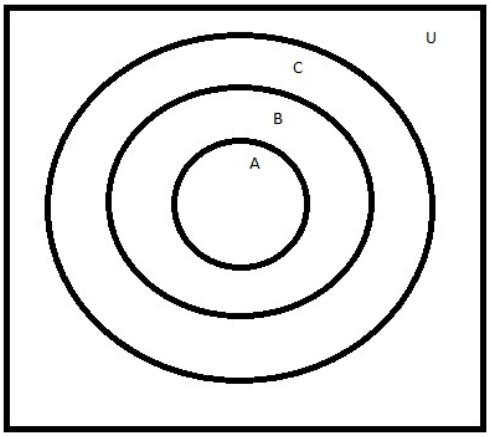
True.

sets are not equal.)

g). {{ ø }} ⊂ {{ ø }, { ø }}

False. These are equal.

14)



18) Find two sets A and B such that $A \in B$ and $A \subseteq B$.
A = {1}
B = {2, {1}}

20)
a). | ø |
0 this is not a set
b) |{ ø }|
1
c) . |{ ø, { ø }}|
2
d) |{ ø, { ø }, { ø, { ø }}}|
3

32) Let A = {a, b, c}, B = {x, y}. and C = {0, 1}
a) A x B x C
{(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) C x B x A
{(0, x, a), (0, x, b), (0, x, c), (1, x, a), (1, x, b), (1, x, c), (0, y, a), (0, y, b), (0, y, c), (1, y, a), (1, y, b), (1, y, c)}
c) C x A x B
{(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) B x B x B
{(x, x, x),(x, x, y),(x, y, x),(x, y, y),(y, x, x),(y, x, y),(y, y, x),(y, y, y)}