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Notes: *The complement symbol is not possible to create on Microsoft word, instead I am using underscores such that the complement of A = _A_*

3.1.2:

    a) false
    b) true
    c) true
    d) true
    e) false
    f) true
    g) false
    h) true
    i) true

3.1.5:

    a) $\{-2, -1, 0, 1, 2\} = \{x \in Z: -2 \geq x \leq 2\}$
    b) $\{3, 6, 9, 12, ...\} = \{x \in Z: x \text{ is a multiple of } 3\}$

3.2.2:

    a) N/A
    b) $P(1,2) = \{\emptyset, \{1\}, \{2\}, \{1,2\}$

3.2.4:

    a) N/A
    b) $\{\{2\}, \{1,2\}, \{2,3\}\}$

3.2.5:

    a) false
    b) true
    c) need more information
    d) false
    e) need more information
    f) need more info

3.3.1:

    a) N/A
    b) N/A
    c) N/A
    d) $\{-5, -3, 0, 1, 4, 17\}$
    e) $\{1\}$
    f) N/A

g) {-5, -3, 1, 17}

3.3.4:

a) {b}
b) {{a}, {b}, {c}, {a, b}, {a, b, c}
c) Ø
d) {{{a}, {b}, {a, b}}, {{b}, {c}, {b, c}}}

3.4.2:

a) {5, 6, 7}
b) is the set of elements that are a member of exactly one of A, B, and C

3.4.5:

a) A
b) Ø
c) Not enough information given
d) Ø
e) Not enough information given

3.5.2:

a) N/A
b) (B ∪ A) ∩ ($\bar{B}$ ∪ A) = A
   a. communitive law
   b. (A ∪ B) ∩ (A ∪ $\bar{B}$) = A
   c. Distributive law
   d. A ∪ (B ∩ $\bar{B}$) = A
   e. Complement law
   f. A ∪ (Ø) = A
   g. Identity law
   h. A = A
c) N/A
d) N/A
e) N/A
f) A ∩ (B ∩ $\bar{B}$) = Ø
   a. Complement law
   b. A ∩ (Ø) = Ø
   c. Domination law
   d. Ø = Ø

3.5.4:

a) A − (B ∩ A) = A - B
   a. Subtraction law

    b.   A ∩ _(B ∩ A)_ = A – B

    c.   De Morgan's law

    d.   A ∩ (_B_ ∪ _A_) = A – B

    e.   Distributive law

    f.   (A ∩ _B_) ∪ (A ∩ _A_) = A – B

    g.   Complement law

    h.   (A ∩ _B_) ∪ (Ø)= A – B

    i.   Identity law

    j.   A ∩ _B_ = A – B

    k.   Subtraction law

    l.   A ∩ _B_ = A - B

3.6.3:

a) false
b) N/A
c) false
d) N/A
e) true

3.6.4:

a) {++, +-, -+, --}
b) {000, 001, 011, 111, 110, 100, 101, 010}

3.6.5:

a) 128
b) 64

3.7.3:

a) no, x = 2
b) yes
c) yes