Homework 5: 2.2: 24, 2.4: 2, 8, 2.5: 2

2.2:

24. Let A, B, and C be sets. Show that (A B) C = (A C) (B C)

1. Given
2. Def. of
3. De Morgan’s Law
4. Complementation Law
5. Associative Law
6. Distributive Law
7. Complement Law
8. Commutative Law
9. Associative Law
10. Def. of

2.4:

2. What is the term of the sequence if equals:

a)

128

b) 7

7

c)

2

d)

256

8. Find at least three different sequences beginning with 3, 5, 7 whose terms are generated by a simple formula or rule.

1.

2.

3.

2.5:

2. Determine whether each of these sets is finite, countably infinite, or countable. For those that are countably infinite, exhibit a one-to-one correspondence between the set of positive integers and that set.

1. The integers greater than 10

A is countably infinite. Let be defined by

1. The odd negative integers

A is countably infinite. Let be defined by

1. The integers with absolute value less than 1,000,000

A is finite.

1. The real numbers between 0 and 2

A is uncountable.

1. The set where A = {*2, 3*}

The set is countably infinite. Let be defined by

1. The integers that are multiples of 10

A is countably infinite. Let be defined by .