LIST OF TOPICS

Formal logic and de Morgan's law 2.1,2.4 ....

Conditional sentences, 2.10; converse; biconditional sentences 2.17 ....

Negation of biconditional; tautologies; conditional proof 2.23,24 ....

Modus ponens Contradictions; contrapositives; proof by contrapositive and contradiction

Quantifiers: $\exists, \forall$; ex. and counterex.; free variables and bound variables ....

Quantifiers: generalized De Morgan's laws 3.5; order of quantifiers........................

Quantifirers: more practice with the generalized De Morgan's laws; uniqueness ....

Even numbers and odd numbers ....

Rational numbers and irrational numbers; $\sqrt{2}$, 4.28 ....

Divisibility; prime numbers; 4.45 ....

4.49, 4.51; Goldbach; congruences of integers ....

Congruences of integers ....

Induction, 5.2 ....

Review I ....

MIDTERM I ....

Pascal's triangle; $(a+b)^3$; 5.18 ....

Sums of powers; 6.8 ....

Sums of geometric progressions; complete induction; 7.2 ....

7.4; complete induction on sum of geo. prog. and binomial expansion ....

Section 5, exercise 15, primes ....

Sets ....

Section 4, exercise 19, Section 5 exercise 12, Section 6 exercise 14 ....

Sets, 10.6 ....

Sets, De Morgan's laws ....

Section 4 exercise 19, Section 5 exercise 13; 10.25 ....

Venn diagram; 10.38; the whole numbers as sets ....

Spring break ....

Ordered pairs; Catersian products; functions ....

The range of a function; composition; surjection ....

Bijections; Injections ....

Section 5, exercise 20, Section 10 exercise 19 ....

Section 10, exercise 33, Section 10 exercise 31, Section 5 exercise 19 ....

Section 11, exercise 8,9, Section 10 exercise 18,31

MIDTERM II ....

Section 11, exercise 20, 22; Section 10 exercise 33 ....

Section 11, exercise 22; 13.1; 13.3 ....

13.14; 13.16; ....

REFERENCES