**5.7 The Binomial Theorem**

Objectives: To expand a binomial using Pascal’s Triangle.

To use the Binomial Theorem.

**Pascal’s Triangle**: when you arrange the values of in a triangular pattern in which each row corresponds to a value of n.

1

1

1

1

2

1

3

3

1

1

1 …………1

Each number other than 1 is the sum of the two numbers directly above it

**The Binomial Theorem**;

The binomial expression of (a + b)n for any positive integer n is*:*

**Where**

*Example:*

*Expand (x + 2)3*

To expand a power of a binomial difference, you can write the binomial as a sum. **(a – b)n = (a + (-b))n**

* *The resulting expansion will have terms whose signs alternate between – and +*

*Example:*

*Expand (x – y)4 = (x+(-y))^4*

HMWK: pg 328 #1-10, 30, 45