English Morning Talk

Mathematics Extended Part (M2)

Date: 14/11/2023

F.5– M2 (5C Joe Chen & 5C Thomas Cheung)

T + J	Good morning principal teachers and fellow schoolmates. We are students from 5C.
T	I am Thomas.
J	I am Joe. The topic we want to share with you today is the Binomial Theorem. Hey Thomas, have you ever heard of this theorem before?
T	Of course, we usually use Binomial Theorem in M2. The theorem is a formula for the exponentiation of a binomial, which allows us to quickly expand any binomial to any power.
J	Right. For example, if we want to calculate (x+y)^3, we can use the Binomial Theorem to get the answer without multiplying (x+y) step by step. In the expression, we have to use the combination number nCr, which represents the number of ways to choose R items from N items. This is also called the binomial coefficient because it is the coefficient of each term after the binomial expansion.
T	Besides, we can also use Pascal's Triangle to find these coefficients. Pascal's Triangle is a triangle composed of natural numbers, and each number in each row is the sum of the two adjacent numbers in the previous row. Each row of Pascal's Triangle corresponds to a binomial coefficient of a power, such as the fourth row is the coefficient of (x+y)^3, which is 1 3 3 1.
J	So, what is the use of the Binomial Theorem? Can it help us simplify some complex algebraic operations?
T	Sure, it also helps us when we are doing polynomial multiplication, division, and differentiation. It can also help us find some special values, such as the Fibonacci sequence and the binomial distribution.

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J	I see. Indeed, the Binomial Theorem is also related to other mathematical branches such as geometry, combination, and probability. It is a very important and interesting theorem.
T	As M2 students for 2 years, we are now experts of applying Binomial Theorem. So, my dearest schoolmates, if you have any questions about this theorem, please feel free to approach us during recess or lunchtime.
T + J	This is the end of our sharing thank you.