

# INTRO TO MATH...



One of the most well known methods of finding irreducibility of polynomials with integer coefficients is demonstrated by Eisenstein's criterion. Eisenstein's criterion states that if all the coefficients, except possibly the first one, are divisible by a prime "p", and the constant coefficient is not divisible by  $p^2$ , then the polynomial is irreducible. It sometimes happens that the criterion is not applicable to the polynomial because it does not follow the criteria. Eisenstein's criterion basically reduces the problem of factoring a difficult polynomial to a problem of factoring integers by using the coefficients of the former polynomial to see if they have a common prime divisor. Grace Murray Hopper found a way to convert a polynomial into a convex polygon. With this conversion she found a way to decompose the polygon the way that Eisenstein broke down the polynomials.