elementary symmetric polynomial

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The coefficient of x^{n-k} in the polynomial $(x+t_1)(x+t_2)\cdots(x+t_n)$ is called the k^{th} *elementary symmetric polynomial* in the n variables $t_1, \ldots, t_n$. The elementary symmetric polynomials can also be constructed by taking the sum of all possible degree k monomials in $t_1, \ldots, t_n$ having distinct factors.

The first few examples are:

$n = 1$**:** t_1

$n = 2$**:** $\begin{array}{l} t_1 + t_2 \\ t_1 t_2 \end{array}$

$n = 3$**:** $\begin{array}{l} t_1 + t_2 + t_3 \\ t_1 t_2 + t_2 t_3 + t_1 t_3 \\ t_1 t_2 t_3 \end{array}$