

Combinatoriek en Partities (3)

Johan van de Leur Valentijn de Marez Oyens

$$(1+x)(1+x^2)(1+x^3)(1+x^4)(1+x^5)$$

$$(1+x)(1+x^2)(1+x^3)(1+x^4)(1+x^5)$$
$$=(1+x^1)(1+x^2)(1+x^3)(1+x^4)(1+x^5)$$

$$\begin{aligned}
& (1+x)(1+x^2)(1+x^3)(1+x^4)(1+x^5) \\
&= (1+x^1)(1+x^2)(1+x^3)(1+x^4)(1+x^5) \\
&= 1 + x^1 + x^2 + x^1x^2 + x^3 + x^1x^3 + x^2x^3 + x^1x^2x^3 \\
&\quad + x^4 + x^1x^4 + x^2x^4 + x^1x^2x^4 + x^3x^4 + x^1x^3x^4 \\
&\quad + x^2x^3x^4 + x^1x^2x^3x^4 + x^5 + x^1x^5 + x^2x^5 + x^1x^2x^5 \\
&\quad + x^3x^5 + x^1x^3x^5 + x^2x^3x^5 + x^1x^2x^3x^5 + x^4x^5 \\
&\quad + x^1x^4x^5 + x^2x^4x^5 + x^1x^2x^4x^5 + x^3x^4x^5 \\
&\quad + x^1x^3x^4x^5 + x^2x^3x^4x^5 + x^1x^2x^3x^4x^5
\end{aligned}$$

$$(1 + x^1)(1 + x^2)(1 + x^3)(1 + x^4)(1 + x^5)$$

$$\begin{aligned}
& (1 + x^1)(1 + x^2)(1 + x^3)(1 + x^4)(1 + x^5) \\
&= 1 + x^1 + x^2 + (x^{1+2} + x^3) + (x^{1+3} + x^4) \\
&+ (x^{1+4} + x^{2+3} + x^5) + (x^{1+5} + x^{2+4} + x^{1+2+3}) \\
&+ (x^{2+5} + x^{3+4} + x^{1+2+4}) + (x^{1+2+5} + x^{1+3+4} + x^{3+5}) \\
&+ (x^{1+3+5} + x^{2+3+4} + x^{4+5}) + (x^{1+2+3+4} + \\
&+ x^{1+4+5} + x^{2+3+5}) + (x^{1+2+3+5} + x^{2+4+5}) \\
&+ (x^{1+2+4+5} + x^{3+4+5}) + \\
&+ x^{1+3+4+5} + x^{2+3+4+5} + x^{1+2+3+4+5}.
\end{aligned}$$

$$(1 + q + q^2)(1 + q^2 + q^4)(1 + q^3 + q^6) =$$

$$(1 + q + q^2)(1 + q^2 + q^4)(1 + q^3 + q^6) =$$

$$(1 + q + q^{1+1})(1 + q^2 + q^{2+2})(1 + q^3 + q^{3+3}) =$$

$$(1 + q + q^2)(1 + q^2 + q^4)(1 + q^3 + q^6) =$$

$$(1 + q + q^{1+1})(1 + q^2 + q^{2+2})(1 + q^3 + q^{3+3}) =$$

$$1 + q^1 + (q^{1+1} + q^2) + (q^{1+2} + q^3)$$

$$+ (q^{1+1+2} + q^{1+3} + q^{2+2}) + (q^{1+1+3} + q^{1+2+2} + q^{2+3})$$

$$+ (q^{1+1+2+2} + q^{1+2+3} + q^{3+3}) + (q^{1+1+2+3} + q^{1+3+3} +$$

$$+ q^{2+2+3}) + (q^{1+1+3+3} + q^{1+2+2+3} + q^{2+3+3}) +$$

$$+ (q^{1+1+2+2+3} + q^{1+2+3+3}) + (q^{1+1+2+3+3} + q^{2+2+3+3}) +$$

$$+ q^{1+2+2+3+3} + q^{1+1+2+2+3+3} .$$









