$$n - de\ driehoeksgetal\ D_n = \frac{n(n+1)}{2} = \binom{n+1}{2}$$

$$n - de\ viervlaksgetal\ T_n = \frac{n(n+1)(n+2)}{6} = \binom{n+2}{3}$$

$$Verband\colon T_n = \sum_{i=1}^{n} D_i\ .$$

$$\underset{\text{VIERVLAKSGETAL}}{20} = 1 + \underbrace{3 + 6 + 10}_{\text{DRIEHOEKSGETALLEN}}$$

Via de formule van STIFEL-PASCAL bekomen we immers dat

$$\begin{aligned} 20 = \binom{6}{3} &= \binom{5}{3} + \binom{5}{2} \\ &= \binom{4}{3} + \binom{4}{2} + \binom{5}{2} \\ &= \binom{3}{3} + \binom{3}{2} + \binom{4}{2} + \binom{5}{2} \end{aligned}$$

en $\binom{3}{3} = \binom{2}{2}$, zodat

$$20 = \binom{6}{3} = \binom{2}{2} + \binom{3}{2} + \binom{4}{2} + \binom{5}{2} = 1 + 3 + 6 + 10.$$

TE BEWIJZEN: $\displaystyle\sum_{i=1}^{n} \frac{i(i+1)}{2} = \frac{n(n+1)(n+2)}{6}$

Bewijs:

$$\begin{aligned} \sum_{i=1}^{n} \frac{i(i+1)}{2} &= \frac{1}{2}\sum_{i=1}^{n} i^2 + \frac{1}{2}\sum_{i=1}^{n} i \\ &= \frac{1}{2} \cdot \frac{n(n+1)(2n+1)}{6} + \frac{1}{2} \cdot \frac{n(n+1)}{2} \\ &= \frac{n(n+1)}{2}\left[\frac{2n+1}{6} + \frac{1}{2}\right] \\ &= \frac{n(n+1)}{2} \cdot \frac{2n+4}{6} \\ &= \frac{n(n+1)(n+2)}{6}. \end{aligned}$$