

## GEOMETRINEN SUMMA

$$a + aq + aq^2 + aq^3 + \dots + aq^{n-1} = S_n$$

$$S_n = \frac{a_1(1-q^n)}{1-q}$$

esim1

$$\sum_{n=1}^{10} 3 \cdot 2^n$$

$$a_1 = 3 \cdot 2^1 = 6$$

$$a_2 = 3 \cdot 2^2 = 12$$

⋮

$$a_{10} = 3 \cdot 2^{10} = 60$$

$$\frac{a_{n+1}}{a_n} = \frac{3 \cdot 2^{n+1}}{3 \cdot 2^n} = 2^{\cancel{n+1} - \cancel{n}} = 2$$

= vakio, joten

kyseessä on  
geom. summa

$$S_{10} = \frac{a_1(1-q^n)}{1-q}$$

$$= \frac{6(1-2^{10})}{1-2} = \frac{6 \cdot (-1023)}{-1} = \underline{\underline{6138}}$$