

BARISAN DAN DERET

$$\begin{array}{l} U_n = S_n - S_{n-1} \\ U_n = \text{Suku ke } n \\ S_n = \text{Jumlah } n \text{ suku} \\ \text{pertama} \end{array}$$

berlaku untuk setiap deret

Deret aritmatika

$$u_2 - u_1 = u_3 - u_2 = u_n - u_{n-1}$$

$$U_n = a + (n-1)b$$

$$S_n = \frac{n}{2}(a + U_n) = \frac{n}{2}(2a + (n-1)b)$$

$$\text{Suku tengah } U_t = \frac{U_1 + U_n}{2}$$

a = suku awal

b = beda = $u_n - u_{n-1}$

u_t = suku tengah

$$\text{Sisipan } b' = \frac{b}{k+1}$$

b' = beda baru

k = banyak sisipan

Deret Geometri

$$\frac{u_2}{u_1} = \frac{u_3}{u_2} = \frac{u_n}{u_{n-1}}$$

$$U_n = ar^{n-1}$$

$$S_n = \frac{a(r^n - 1)}{r - 1} = \frac{a(1 - r^n)}{1 - r}$$

$$\text{Suku tengah } U_t = \sqrt{U_1 U_n}$$

a = suku awal

$$r = \text{rasio} = \frac{u_n}{u_{n-1}}$$

$$\text{Sisipan } r' = \sqrt[k+1]{r}$$

r' = rasio baru

k = banyak sisipan

Deret Geometri tak hingga

$$S_\infty = \frac{a}{1-r} \text{ syarat } -1 < r < 1$$