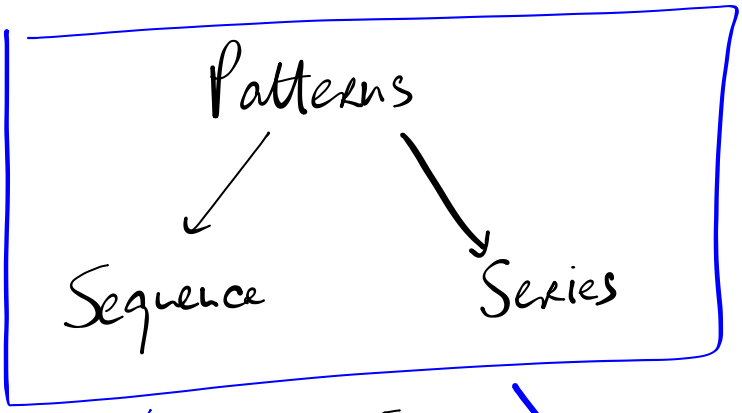

$d = T_2 - T_1$

$R = \frac{T_2}{T_1}$

Arithmetic "d"

① $T_n = a + (n-1)d$

② $S_n = \frac{n}{2}[2a + (n-1)d]$

Geometric "R"

③ $T_n = ar^{n-1}$

④ $S_n = \frac{a(1-R^n)}{1-R}$

⑤ $S_\infty = \frac{a}{1-R}$ $|R|<1$

$\sum_{r=0}^{5} 2n$?

$2n$ ← Term Rule

$\sum_{r=0}^{5} 2n = 2(0) + 2(1) + 2(2) + 2(3) + 2(4) + 2(5) = 30$

$\sum_{r=0}^{20} 2n = \underset{T_1=a}{2(0)} + 2(1) + 2(2) + \ldots + \underset{T_{21}}{2(20)}$

$= \underset{a}{0} + 2 + 4 + \ldots + 40$

$d = +2$

Arithmetic Sum $S_n = \frac{n}{2}[2a + (n-1)d]$

$S_{21} = \frac{21}{2}[2(0) + (20)2]$

$= 420$

Arithmetic Sequence "d"

$T_5 = -18$, $T_{10} = 12$

$a = ?$
$d = ?$
$S_{15} = ?$

$T_n = a + (n-1)d$
$S_n = \frac{n}{2}[2a + (n-1)d]$

$T_5 = -18$: $a + 4d = -18$ (1)
$T_{10} = 12$: $a + 9d = 12$ (2)

$-5d = -30$

$d = 6$

(1) $a + 4(6) = -18$

$a = -42$

$S_{15} = \frac{15}{2}[2(-42) + (15-1)6]$

$S_{15} = 0$

Find Three nos in an arithmetic sequence:
Sum = 27 , Product = 704. ?

$T_n = a + (n-1)d$
$S_n = \frac{n}{2}[2a + (n-1)d]$

let nos be a , $a+d$, $a+2d$

Sum = 27 : $a + a+d + a+2d = 27$

$3a + 3d = 27$

$a + d = 9 \Rightarrow a = 9 - d$

Product = 704 : $(a)(a+d)(a+2d) = 704$

$\Rightarrow (9-d)(9-d+d)(9-d+2d) = 704$

$(9-d)(9)(9+d) = 704$

DOTS ÷9

$9(81 - d^2) = 704$

$81 - d^2 = \frac{704}{9}$

$81 - \frac{704}{9} = d^2$

$d = \sqrt{81 - \frac{704}{9}} = \pm\frac{5}{3}$ ← 2 options

if $d = \frac{5}{3}$ $\Rightarrow a = 9 - \frac{5}{3} = \frac{22}{3}$

Sequence : $\frac{22}{3}$, 9 , $\frac{32}{3}$

or if $d = -\frac{5}{3}$

Sequence : $\frac{32}{3}$, 9 , $\frac{22}{3}$