Know $S_5 = \frac{u_1(1-r^5)}{1-r} = 3798$ $\quad S_7 =$

$S_\infty = \frac{u_1}{1-r} = 4374$ $\quad u_1 =$ $\quad r =$

$(1-r^5)\ \frac{u_1}{1-r} = 4374(1-r^5)$

$\frac{4374(1-r^5)}{4374} = \frac{3798}{4374}$

$-r^5 = \frac{3798}{4374} - 1$

$r^5 = -\frac{3798}{4374} + 1$

$r = \frac{2}{3}$

$\frac{u_1}{1-\frac{2}{3}} = 4374$

$\frac{u_1}{\frac{1}{3}} = 4374$

$u_1 = 1458$

Cornell Notes	Topic/Objective: 6.8 Applications of Geometric + Arithmetic patterns	Name:
AVID Decades of College Dreams		Class/Period: 4
		Date: 5/1/17

Essential Question: What are some of the applications of sequences & series?

Questions:

Notes:

① Compound Interest.

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

P = Principal
r = interest rate
n = # times compounded anually
t = # of years

Ex) In a geometric sequence $V_1 = 6$, $r = 1.5$
In an arith. seq, $u_1 = 75$ and $d = 100$
after how many terms will the
Sum of the geo seq > Sum arith?

6L p. 182 1-4

$$S_{Geo} \frac{6(1.5^n - 1)}{1.5 - 1} > \frac{n}{2}\left(2(75) + (n-1)100\right) = S_{arith}$$

6.9 Pascal's Triangle

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
⋮

to be continued...

Questions:	Notes: