

6.8 Applications of geo + arith. patterns

- compound interest $A = P(1 + \frac{r}{n})^{nt}$
- population growth

ex) Deposit \$1000 $P=1000$
4% APR $r=0.04$
compounded quarterly $n=4$
Amount after 10 yrs? $t=10$

$$A = 1000(1 + \frac{0.04}{4})^{(4)(10)}$$
$$A \approx \$1488.86$$

Ex] in a geo. seq. $V_1 = 6$ and $r = 1.5$
in an arith. seq. $u_1 = 75$ and $d = 100$

After how many terms will the
sum of the terms of the
geo. be greater than the sum
of the arith.?

$$\text{geo } S_n = \frac{u_1(1-r^n)}{1-r} \quad \text{arith } S_n = \frac{n}{2}(2u_1 + d(n-1))$$

put in calculator - use tables