

# 10/21 Notes

AZ

Warmup: go over exit ticket questions

## geometric sequences

recursive formula:  $u_0 = \underline{\hspace{2cm}}$   
 $u_n = u_{n-1} \cdot CR$   
 $n \geq 1$

explicit formula:  $u_n = u_0 (CR)^n$

continuous formula:  $y = a(b)^x$

$y \sim u_n$   
 $a \sim u_0$  (principle amount)  
 $b \sim CR$  (growth/decay)  
 $x \sim n$

## growth & decay rates

• if given the  $b$  value & asked for growth/decay %...  
growth % =  $(b-1) \cdot 100$   
decay % =  $(1-b) \cdot 100$

• if given the growth/decay % & need to find  $b$   
 $b = 1 + GR(\text{decimal})$   
 $b = 1 - DR(\text{decimal})$

## exponential formula: $y = a(b)^x$

where  $a$  is the principle amount AKA the  $y$ -int.

$b$  is the common ratio or the rate

$b > 1$  growth

$0 < b < 1$  growth (decimal) =  $CR - 1$  or  $b - 1$

decay (decimal) =  $1 - CR$  or  $1 - b$

Note: to find the CR you do  $\frac{\text{Term 2}}{\text{Term 1}}$