

09/27/23 : Exponential Functions

CRA - Profit! Just do it (Nike)

HW            18        19        20        21  
                  W        F        Sun      M.

Do Problem 1

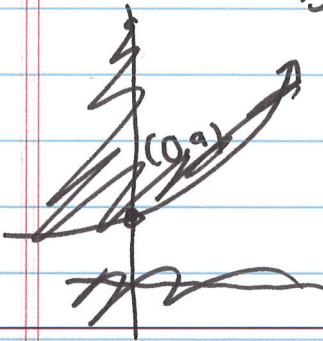
Defn  $f(x) = ab^x$

$a$  = initial value  $(0, a)$

$b$  = base or growth factor

$r := b - 1$

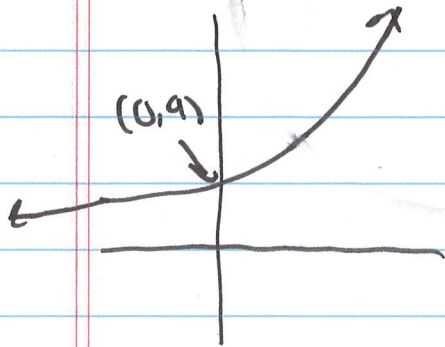
$|r| = |b - 1|$  called growth rate.



$r$  is usually a percentage, in a word problem. This is used to find  $b$ .

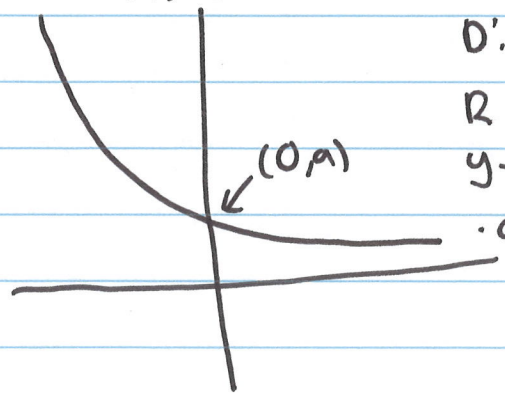
Some key properties Desmos Below!

$a > 0$      $b > 1$

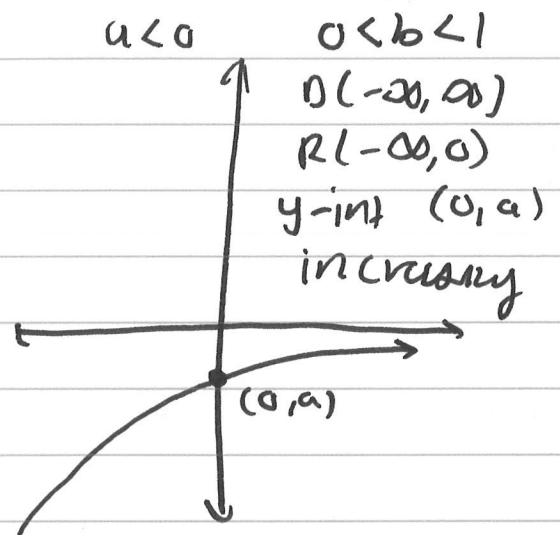
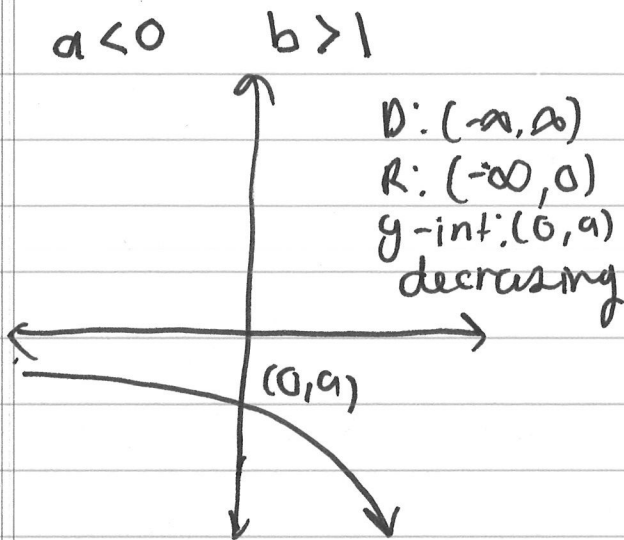


- $D: (-\infty, \infty)$
- $R: (0, \infty)$
- $y$ -int  $(0, a)$
- increasing

$a > 0$      $0 < b < 1$



- $D: (-\infty, \infty)$
- $R: (0, \infty)$
- $y$ -int  $(0, a)$
- decreasing



~~Sometimes we care~~

Defn:  $f(x) = ab^x$

- $b > 1$   $f$  is said to have exponential growth
- $0 < b < 1$   $f$  is said to have exponential decay.

Do problem 3, 4, 5, 6, then 2