

## GUIDED NOTES: Exponential Functions

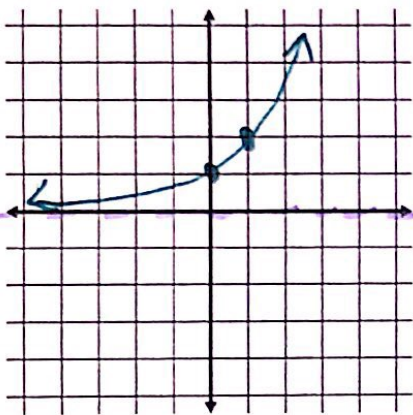
An exponential function is a function in the general form  $a = pb^t$

where  $a =$  amount at end       $p =$  principal amount (beginning)  
 $b =$  change                       $t =$  time

**Growth:**  $b > 1$

**Decay:**  $0 < b < 1$

EX1)  $f(x) = 2^x$

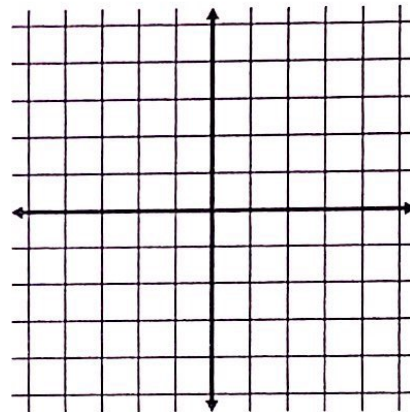


domain:  
 $(-\infty, \infty)$

range:  
 $(0, \infty)$

asymptote:  
 $y = 0$

EX2)  $f(x) = 2^x - 3$

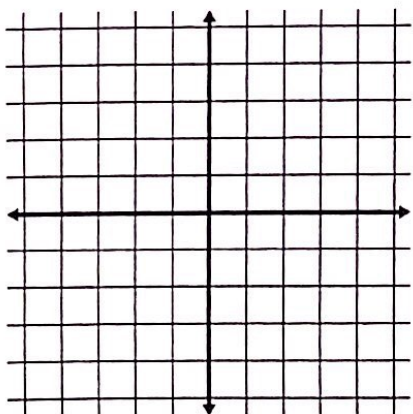


domain:

range:

asymptote:

EX3)  $f(x) = (\frac{1}{2})^x$

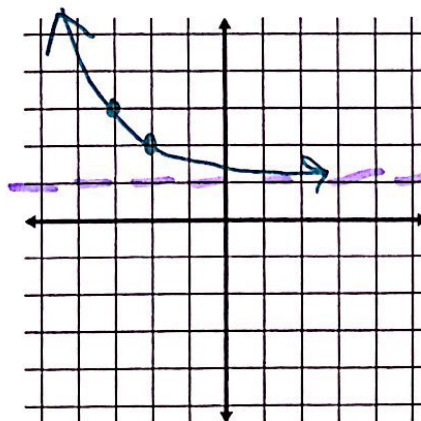


domain:

range:

asymptote:

EX4)  $f(x) = (\frac{1}{2})^{x+2} + 1$



domain:  
 $(-\infty, \infty)$

range:  
 $(1, \infty)$

asymptote:  
 $y = 1$