NOTES ON EXPONENTIAL FUNCTIONS

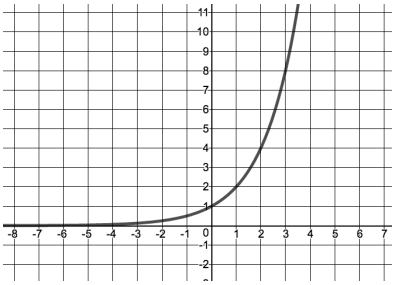
The general equation of an exponential function is $y = C\left(b\right)^{x}$. What makes it exponential is that the exponent is a variable. C and b are numbers.

Exponential functions are grouped into two main classes-growth and decay.

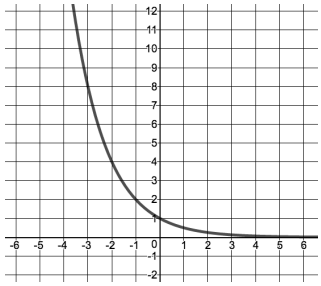
- In exponential growth, b > 1.
- In exponential decay, 0 < b < 1.

Here are examples of two graphs of exponential functions.

Growth



Decay



Domain: $x \in \left(-\infty, \infty\right)$

Range: $y \in \left(0, \infty\right)$

x-intercept: None

y-intercept: (0, C)

These can change if the equation has transformations.

Growth and decay rates are written as percents. It is $1-b$ (in decay) or $b-1$ (in growth), converted to a percent.

Growth and decay factors are written as whole numbers or decimals. It is the value of "b".