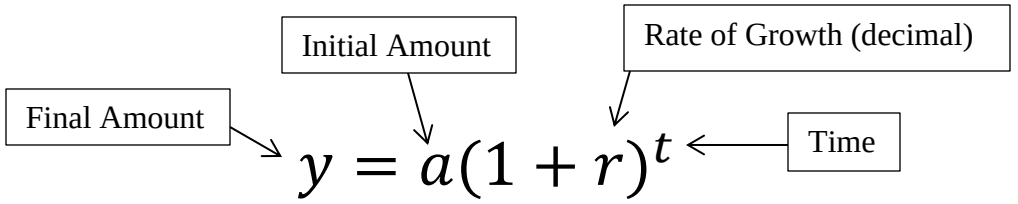
EXPONENTIAL GROWTH & DECAY

Exponential Growth occurs when a quantity _____ by the same factor over equal intervals of time.

EXPONENTIAL GROWTH:



Example 1: A website has 10,000 registered users in 2012. The number y of members increases by 20% each year.

A) Write an exponential growth function that represents the number of registered users y after t years.

B) How many registered users will there be in 2020? Round your answer to the nearest thousandth.

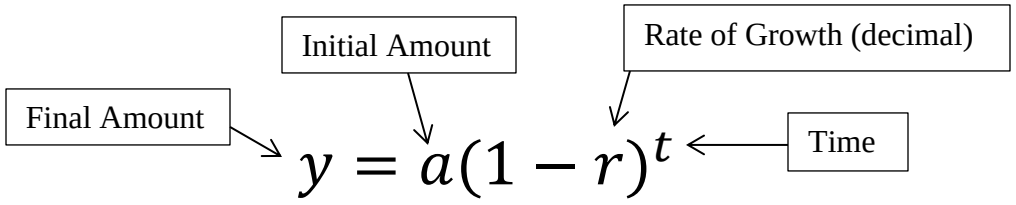
Example 2: A population of Johnson City has grown at a rate of 3.2% per year for the last 10 years. The population 10 years ago was 25,000.

A) Write an exponential growth function that represents the Johnson City population y after t years.

B) What would the population be today? Round your answer to the nearest thousandth.

Exponential Decay occurs when a quantity _____ by the same factor over equal intervals of time.

EXPONENTIAL DECAY:



Example 3: The value of a car is $35,000. It loses 10% of its value each year.

A) Write a function that represents the value of y (in dollars) of the car after t years.

B) What will the value of the car be after 10 years?

Example 4: Each year the local country club sponsors a tennis tournament. Play starts with 128 participants. During each round, half of the players are eliminated.

A) Write a function that represents the number of players y after t rounds.

B) How many players remain after 5 rounds?