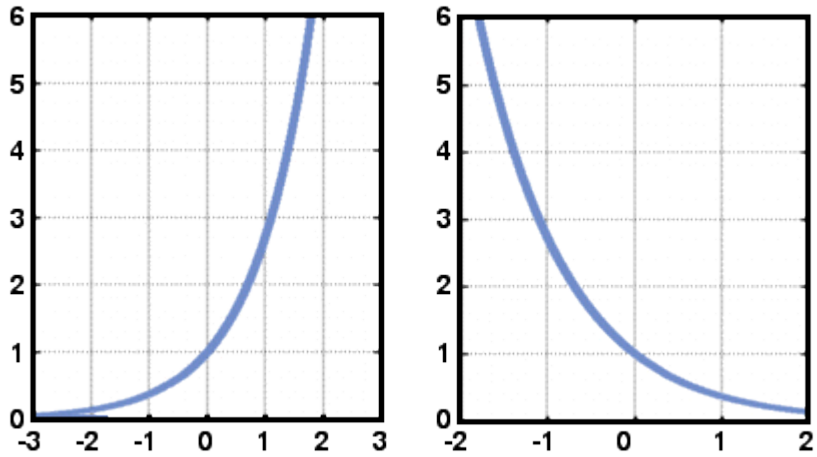
Exponential Growth

$$A = P(1 + r)^t$$



Exponential Decay

$$A = P(1 - r)^t$$

Mr. Foster is starting a new job. His salary for the first year is $30,000. He will receive a 5% raise each year after that. Write a formula to define Mr. Foster's salary, s, for the nth year.

How much will Mr. Foster make after 7 years?

Janet purchased a new car for $25,000. The moment, she drove the car off the lot, it began depreciating 15% per year. Write a formula to define the value of Janet's car, v, after n years.

How much is Janet's car worth after 4 years?

In 2000, the world population was about 6.09 billion. During the next 13 years, the world population increased by about 1.18% each year. Write an exponential equation giving the population y (in billions) n years after 2000.

Estimate the world population in 2005.

You take a 325 milligram dosage of ibuprofen. During each subsequent hour, the amount of medication in your blood-stream decreases by about 29% each hour. Write an exponen-tial equation giving the amount y (in milligrams) of ibuprofen in your bloodstream t hours after the initial dose.

How much ibuprofen will remain in your bloodstream after 3 hours?