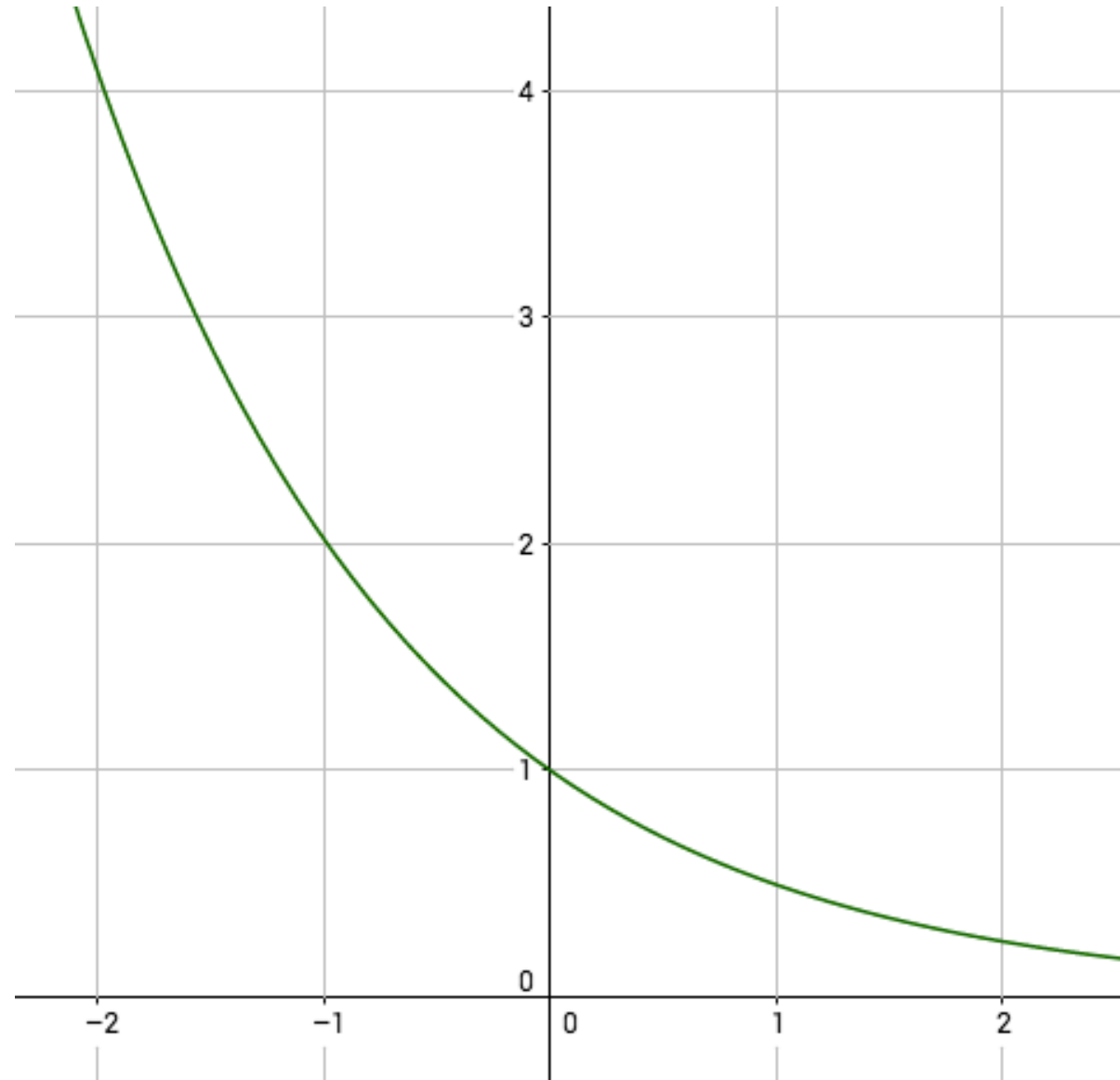# Exponential Decay Functions

A function of the form: $f(x) = ab^x$

$0 < b < 1$

a is the Initial Value

b is the Decay Factor

Exponential Decay Model:

$$y = a(1-r)^t$$

Most real world problems will have percents as the rate of change, so in order for the decay factor to be between 1 and 0 we subtract the rate from 1.

$(1 - r)$ is the Decay Factor

What were the initial values or initial amounts with the zombie problem?

What was the decay factor?

A new car costs $25,000. The value of the car decreases by 15% each year.

Write an exponential decay model giving the car's value y (in dollars) after t years.

initial value =

decay factor =

$y =$

A new snowmobile costs $4,200. The value of the snowmobile decreases by 10% each year.

Write an exponential decay model giving the snowmobile's value y (in dollars) after t years.

initial value =

decay factor =

y =

A new MacBook costs $2,000. The value of the new computer decreases by 15% each year.

Write an exponential decay model giving the computer's value y (in dollars) after t years.

initial value =

decay factor =

y =