

L1 - Exponential Growth

MCR3U

Jensen

General Properties of Exponential Decay

Equation:

$a =$

$b =$

$y =$

$x =$

To calculate x , use the equation:

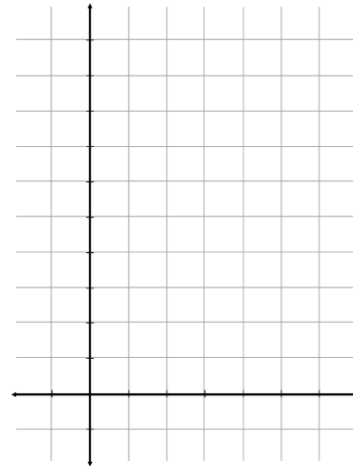
DO IT NOW!

Nuclear power plants use Uranium-239 as a power source. U-239 has a half-life of about 2 years.

a) Complete the chart for the amount of 1000mg sample that will be left after 10 years.

Years	# of half-life periods	Amount of U-239 remaining
0	0	1000
2	1	500
4	2	
6		
8		
10		

b) Graph the relation



c) Write an equation to model this growth

d) How much remains after 25 years?

Example 1: Plutonium-239 has a half-life of 24 years. Find the amount of a 50mg sample left after 35 years.

If exponential decay is given as a percent use the equation:

$a =$

$r =$

$x =$

Example 2:

You buy a new car for \$24,000. The value of the car decreases by 16% every year. How much will the car be worth in 8 years?

Example 3: An adult takes 400mg of Advil. Each hour, the amount of Advil in the adult's system decreases by about 29%. How much Advil will be left after 4 hours?

Example 4: U-239 has a half-life of about 2 years. If you start with a 1000 mg sample, how long will it take to decay to 10 mg?