

What exponential functions do we know so far?

What do the variables represent here?

Compound Interest Formula:

What do the variables represent here?

If I invest \$1, and am given a 100% interest rate, how much money will I have after 1 year if I compound over the following periods:

Round after 4 decimal places.

Yearly:

Every 6 months:

Every 3 months:

Every month:

Every week:

Every day:

Every hour:

Every minute:

Every second:

As we move towards compounding continuously, we find that A approaches 2.7182

e is an irrational number like π . It was first denoted by e by the Swiss mathematician Euler in 1731.

e is used in formulas that are representing *continuous* growth or decay.

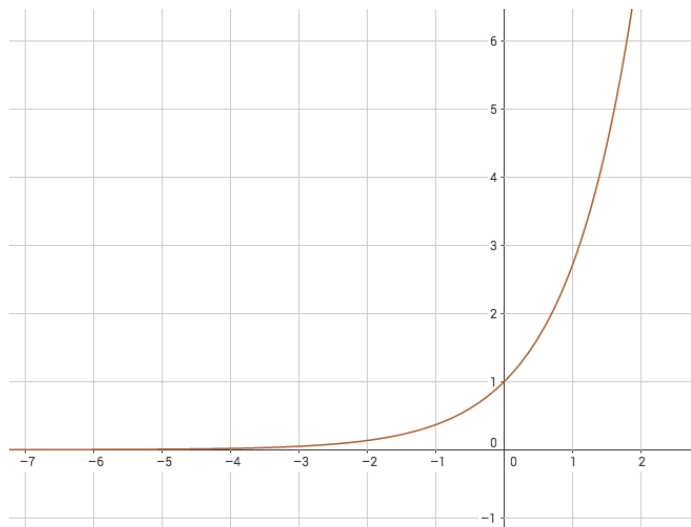
Continuously compounding Interest: $A=Pe^{rt}$

$A =$

$P =$

$r =$

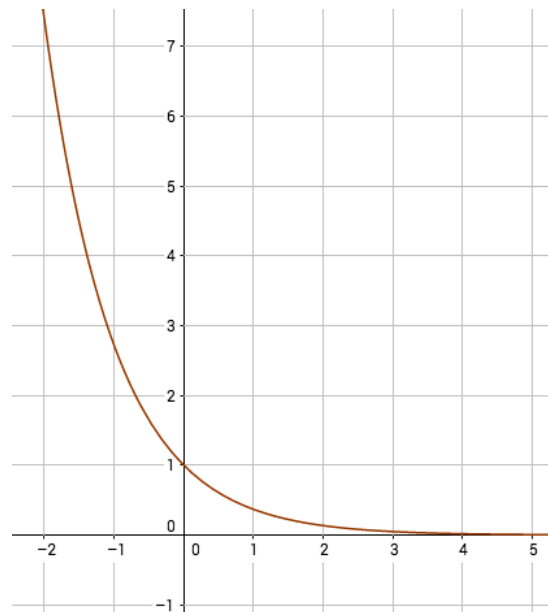
$t =$



Continuously compounding Interest:

$$A = Pe^{-rt}$$

$$A = P(1/e)^{rt}$$



In 1950, the world's population was 2,555,982,611. With a continuous growth rate of approximately 1.68%, what was the population in 1955?

At 5pm, you count 26,300 alien bacteria in your petrie dish. If the continuous growth rate is 2.7%, how many bacteria will there be at midnight?

Simplify the expressions:

$$4x^3 \cdot 2x^3$$

$$\frac{x^{-1}}{x^{-8}}$$

$$\frac{6x^7}{2x^4}$$

$$x^9 \cdot x^{-7}$$

Simplify the expressions:

$$(10e^{-4x})^3$$

$$e^7 \cdot e^4$$

$$2e^{-3} \cdot 6e^5$$

$$\frac{24e^8}{6e^5}$$