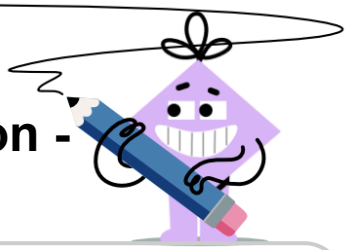
Name

Exponential Function Solution Equation - Decay (Continuous) Scenario to Rate



1

A bacteria population starts at 200. It declines continuously at a certain percent per year. After 6 years it has decreased to a population of 116 bacteria.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{116}{200}}{6}$

B $r = -\frac{\ln \frac{200}{116}}{6}$

2

A bacteria population starts at 600. It declines continuously at a certain percent per month. After 2 months it has decreased to a population of 501 bacteria.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{600}{501}}{2}$

B $r = -\frac{\ln \frac{501}{600}}{2}$

C $r = -\frac{e^{\frac{501}{600}}}{2}$

3

A bacteria population starts at 800. It declines continuously at a certain percent per month. After 3 months it has decreased to a population of 688 bacteria.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{688}{800}}{3}$

B $r = -\frac{\ln \frac{800}{688}}{3}$

4

A bacteria population starts at 900. It declines continuously at a certain percent per year. After 5 years it has decreased to a population of 666 bacteria.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{666}{900}}{5}$

B $r = -\frac{\ln \frac{900}{666}}{5}$

5

A bacteria population starts at 200. It declines continuously at a certain percent per month. After 7 months it has decreased to a population of 162 bacteria.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{e^{\frac{162}{200}}}{7}$

B $r = -\frac{\ln \frac{162}{200}}{7}$

C $r = -\frac{\ln \frac{200}{162}}{7}$

6

A bird population starts at 800. It declines continuously at a certain percent per quarter. After 4 quarters it has decreased to a population of 604.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{604}{800}}{4}$

B $r = -\frac{\ln \frac{800}{604}}{4}$

C $r = -\frac{e^{\frac{604}{800}}}{4}$

7

A whale population starts at 400. It declines continuously at a certain percent per quarter. After 2 quarters it has decreased to a population of 334 whales.

Rearrange the exponential equation to solve for for the rate given this scenario?

A $r = -\frac{\ln \frac{334}{400}}{2}$

B $r = -\frac{\ln \frac{400}{334}}{2}$

C $r = -\frac{e^{\frac{334}{400}}}{2}$

8

A radioactive material starts at an isotope concentration of 700ppm. It decays continuously at a certain percent per week. After 5 weeks it has decayed to an isotope concentration of 602ppm.

Rearrange the exponential equation to solve for for the rate of decay given this scenario?

A $r = -\frac{\ln \frac{602}{700}}{5}$

B $r = -\frac{\ln \frac{700}{602}}{5}$