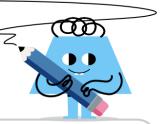


mobius

Exponential Function Solving - Growth (Continuous) Scenario to Rate



1

An insect population starts at 600. It grows continuously at a certain percent growth per day. After 7 days it has increased to a population of 793.

Solve for the rate given this scenario?

$$egin{aligned} \mathsf{A} & \mathsf{0} + r = +rac{e^{rac{P}{P_0}}}{t} & \mathsf{B} & \mathsf{0} + r = +rac{\lnrac{P_0}{P}}{t} \ & \mathsf{C} & \mathsf{G} + r = +rac{\lnrac{P_0}{P}}{t} & \mathsf{D} & r = +rac{\lnrac{P}{P_0}}{t} \end{aligned}$$

2

A social media post starts with 400 views. Its view count grows continually by a certain percent each year. After 7 years it has 751 views.

Solve for the rate given this scenario?

$$egin{array}{ccccc} \mathsf{A} & \mathsf{A} & \mathsf{A} & \mathsf{F} & \mathsf{A} & \mathsf{B} & \mathsf{F} & \mathsf{A} & \mathsf{F} & \mathsf{F} & \mathsf{A} & \mathsf{F} & \mathsf$$

3

A company's share price starts at \$900. It grows continuously at a certain percent growth per year. After 4 years it has a share price of \$1,239.

Solve for the rate given this scenario?

$$egin{array}{cccc} \mathsf{A} & \mathsf{A} + r = +rac{\mathsf{ln}\,rac{S_0}{S}}{t} & \mathsf{B} & r = +rac{\mathsf{ln}\,rac{S}{S_0}}{t} \ & \mathsf{C} & \mathsf{C} + r = +rac{\mathsf{ln}\,rac{S_0}{S}}{t} & \mathsf{D} & \mathsf{A} + r = +rac{\mathsf{ln}\,rac{S_0}{S}}{t} \end{array}$$

4

A credit card starts with \$400 of debt. It grows continuously at a certain percent interest per month. After 8 months the debt has grown to \$469.

Solve for the rate given this scenario?

$$egin{aligned} \mathsf{A} \ \mathsf{7}+r &= +rac{\mathsf{In}\,rac{D_0}{D}}{t} \end{aligned} egin{aligned} \mathsf{B} \ \mathsf{2}+r &= +rac{e^{rac{D}{D_0}}}{t} \end{aligned} \mathbf{C} \ r &= +rac{\mathsf{In}\,rac{D}{D_0}}{t} \end{aligned} egin{aligned} \mathsf{D} \ \mathsf{9}+r &= +rac{e^{rac{D}{D_0}}}{t} \end{aligned}$$

5

A savings account starts with \$200. It grows continuously at a certain percent interest per year. After 3 years it has \$261.

Solve for the rate given this scenario?

$$egin{aligned} \mathsf{A} & \mathsf{O} + r = +rac{e^{rac{P}{P_0}}}{t} & \mathsf{B} & r = +rac{\mathsf{In}\,rac{P}{P_0}}{t} \ \mathsf{G} & \mathsf{G} + r = +rac{\mathsf{In}\,rac{P_0}{P}}{t} & \mathsf{G} + r = +rac{e^{rac{P}{P_0}}}{t} \end{aligned}$$

6

A social media post starts with 600 views. Its view count grows continually by a certain percent each week. After 3 weeks it has 785 views.

Solve for the rate given this scenario?

$$egin{aligned} \mathsf{A} & \mathsf{9} + r = +rac{\mathsf{ln}\,rac{V_0}{V}}{t} & \mathsf{B} & \mathsf{5} + r = +rac{\mathsf{ln}\,rac{V_0}{V}}{t} & \mathsf{C} &$$

7

An app starts with 800 downloads. Its download count grows continually by a certain percent each week. After 6 weeks it has 1,217 downloads.

Solve for the rate given this scenario?

$$egin{array}{c|c} \mathsf{A} & \mathsf{4}+r=+rac{e^{rac{A}{A_0}}}{t} & \mathsf{B} & r=+rac{\mathsf{In}\,rac{A}{A_0}}{t} \ & \mathsf{C} & \mathsf{O}+r=+rac{e^{rac{A}{A_0}}}{t} & \mathsf{D} & \mathsf{9}+r=+rac{e^{rac{A}{A_0}}}{t} \ & \end{array}$$

8

A rabbit population starts at 400. It grows continuously at a certain percent growth per year.

After 8 years it has increased to a population of 646 rabbits.

Solve for the rate given this scenario?

$oxed{A \ 0+r=+rac{e^{rac{P}{P_0}}}{t}}$	$oxed{egin{array}{l} B \\ 7+r=+rac{Inrac{P_0}{P}}{t} \end{array}}$
$r=+rac{\lnrac{P}{P_0}}{t}$	