

mobius

Exponential Function Solving - Growth (Continuous, Mis-matched Time Units) -



Solve for the time given this model of a growth of debt 2 on a credit card with continuous compounding?

$$269 = 200 \cdot e^{(0.05 \cdot \frac{t}{3})}$$

Solve for the time given this model of a continuously compounding growth of a share price?

$$773 = 700 \cdot e^{(0.02 \cdot \frac{t}{4})}$$

$$t = + 4 \cdot rac{\ln rac{S}{S_0}}{r} \ egin{array}{c}^{ ext{B}} t = + 4 \cdot rac{r}{\ln rac{S}{S_0}} \end{array}$$

3 Solve for the time given this model of a continuously compounding growth of a share price?

Solve for the time given this model of a continuously compounding growth of money in a savings account?

$$350 = 200 \cdot e^{(0.07 \cdot t \cdot 12)}$$

$$|350 = 200 \cdot e^{(0.07 \cdot t \cdot 12)}| \ 821 = 700 \cdot e^{(0.02 \cdot \frac{t}{3})}|$$

$t = +rac{1}{12} \cdot rac{r}{\lnrac{S}{S_0}}$	$t = +12 \cdot rac{\ln rac{S}{S_0}}{r}$	Α	$t = +\frac{1}{3} \cdot \frac{\ln P \cdot P_0}{r}$	В	$t = +rac{1}{3} \cdot rac{\ln rac{P}{P_0}}{r}$	
$t=+rac{1}{12}\cdotrac{\lnrac{S}{S_0}}{r}$		С	$t=+3\cdotrac{\lnrac{P}{P_0}}{r}$	D	$t = +3 \cdot rac{r}{\ln rac{P}{P_0}}$	

5 Solve for the time given this model of a continuously compounding growth of money in a savings account?

Solve for the time given this model of a continuously compounding growth of money in a savings account?

$$239 = 200 \cdot e^{(0.06 \cdot \frac{t}{3})}$$

$$232 = 200 \cdot e^{(0.05 \cdot \frac{t}{12})}$$

Α	$t = +\frac{1}{3} \cdot \frac{\ln P \cdot P_0}{r}$	В	$t=+3\cdotrac{r}{\lnrac{P}{P_0}}$	Α	$t=+rac{1}{12}\cdotrac{\lnrac{P}{P_0}}{r}$	В	$t = +12 \cdot rac{\ln rac{P}{P_0}}{r}$
С	$t=+rac{1}{3}\cdotrac{\lnrac{P}{P_0}}{r}$	D	$t=+3\cdotrac{\lnrac{P}{P_0}}{r}$	С	$t = +\frac{1}{12} \cdot \frac{\ln P \cdot P_0}{r}$	D	$t = +12 \cdot rac{r}{\ln rac{P}{P_0}}$

7 Solve for the time given this model of a continuous growth of a bacteria population?

Solve for the time given this model of a continuously compounding growth of money in a savings account?

$$493 = 400 \cdot e^{(0.03 \cdot \frac{t}{12})}$$

493 = 400
$$\cdot e^{(0.03 \cdot \frac{t}{12})}$$
 1, 146 = 800 $\cdot e^{(0.09 \cdot t \cdot 12)}$

$$egin{aligned} \stackrel{ ext{ iny P}}{t} = +rac{1}{12} \cdot rac{\ln P \cdot P_0}{r} egin{aligned} ^{ ext{ iny B}} t = +12 \cdot rac{\ln rac{P}{P_0}}{r} \end{array} \stackrel{ ext{ iny P}}{t} = +rac{1}{12} \cdot rac{r}{\ln rac{P}{P_0}} \ \end{aligned} egin{aligned} ^{ ext{ iny B}} t = +rac{1}{12} \cdot rac{\ln rac{P}{P_0}}{r} \end{aligned}$$