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

1 Solve for the rate given this model of a continuously compounding growth of app downloads?

$$994 = 900 \cdot e^{\left(r \cdot \frac{2}{7}\right)}$$

A $r = +\dfrac{e^{\frac{A}{A_0}}}{\frac{t}{7}}$

B $r = +\dfrac{\ln \frac{A}{A_0}}{\frac{t}{7}}$

C $r = +\dfrac{\ln \frac{A_0}{A}}{t \cdot 7}$

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

$$375 = 200 \cdot e^{\left(r \cdot \frac{7}{3}\right)}$$

A $r = +\dfrac{\ln \frac{D}{D_0}}{\frac{t}{3}}$

B $r = +\dfrac{e^{\frac{D}{D_0}}}{\frac{t}{3}}$

C $r = +\dfrac{\ln \frac{D_0}{D}}{t \cdot 3}$

3 Solve for the rate given this model of a continuously compounding growth of app downloads?

$$1,045 = 900 \cdot e^{\left(r \cdot 5 \cdot 7\right)}$$

A $r = +\dfrac{e^{\frac{A}{A_0}}}{t \cdot 7}$

B $r = +\dfrac{\ln \frac{A}{A_0}}{t \cdot 7}$

C $r = +\dfrac{\ln \frac{A_0}{A}}{\frac{t}{7}}$

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

$$851 = 600 \cdot e^{\left(r \cdot \frac{5}{12}\right)}$$

A $r = +\dfrac{\ln \frac{D}{D_0}}{\frac{t}{12}}$

B $r = +\dfrac{\ln \frac{D_0}{D}}{t \cdot 12}$

C $r = +\dfrac{e^{\frac{D}{D_0}}}{\frac{t}{12}}$

5 Solve for the rate given this model of a continuous exponential growth of social media post views?

$$1,239 = 900 \cdot e^{\left(r \cdot \frac{8}{365}\right)}$$

A $r = +\dfrac{\ln \frac{V}{V_0}}{\frac{t}{365}}$

B $r = +\dfrac{e^{\frac{V}{V_0}}}{\frac{t}{365}}$

C $r = +\dfrac{\ln \frac{V_0}{V}}{t \cdot 365}$

6 Solve for the rate given this model of a continuously compounding growth of app downloads?

$$464 = 400 \cdot e^{\left(r \cdot \frac{3}{365}\right)}$$

A $r = +\dfrac{\ln \frac{A_0}{A}}{t \cdot 365}$

B $r = +\dfrac{\ln \frac{A}{A_0}}{\frac{t}{365}}$

C $r = +\dfrac{e^{\frac{A}{A_0}}}{\frac{t}{365}}$

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

$$821 = 400 \cdot e^{\left(r \cdot \frac{8}{4}\right)}$$

A $r = +\dfrac{\ln \frac{P_0}{P}}{t \cdot 4}$

B $r = +\dfrac{e^{\frac{P}{P_0}}}{\frac{t}{4}}$

C $r = +\dfrac{\ln \frac{P}{P_0}}{\frac{t}{4}}$

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

$$955 = 900 \cdot e^{\left(r \cdot 3 \cdot 4\right)}$$

A $r = +\dfrac{\ln \frac{D}{D_0}}{t \cdot 4}$

B $r = +\dfrac{e^{\frac{D}{D_0}}}{t \cdot 4}$

C $r = +\dfrac{\ln \frac{D_0}{D}}{\frac{t}{4}}$