



Exponential Function Solving - Decay (Discrete) Equation to Rate

1 Solve for the rate given this model of a decline of a whale population (yearly breeding cycle)?

$$545 = 900 \cdot (1 - r)^{(6)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

C $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$

2 Solve for the rate given this model of a decline of a whale population (yearly breeding cycle)?

$$708 = 800 \cdot (1 - r)^{(6)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

C $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

3 Solve for the rate given this model of a decline of a bird population (yearly breeding cycle)?

$$250 = 300 \cdot (1 - r)^{(9)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$

4 Solve for the rate given this model of a balance of a charitable endowment (yearly disbursements)?

$$723 = 900 \cdot (1 - r)^{(3)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{t}{2}} - 1$

5 Solve for the rate given this model of a decline of a toxin concentration (hourly dialysis)?

$$374 = 500 \cdot (1 - r)^{(4)}$$

A $r = -\left(\frac{C}{C_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{C}{C_0}\right)^{\frac{1}{t}} - 1$

C $r = -\left(\frac{C}{C_0}\right)^{\frac{1}{t}} + 1$

6 Solve for the rate given this model of a decline of a bird population (yearly breeding cycle)?

$$429 = 600 \cdot (1 - r)^{(4)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$

C $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

7 Solve for the rate given this model of a decline of a whale population (yearly breeding cycle)?

$$229 = 400 \cdot (1 - r)^{(9)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

C $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$

8 Solve for the rate given this model of a balance of a charitable endowment (daily disbursements)?

$$260 = 300 \cdot (1 - r)^{(7)}$$

A $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

B $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} - 1$

C $r = -\left(\frac{P}{P_0}\right)^{\frac{1}{t}} + 1$