



## Exponential Function Solution Equation - Decay (Discrete) - Equation to Time

1 Rearrange this equation to solve for the time given this model of a decline of a whale population (yearly breeding cycle)?

$$248 = 300 \cdot (1 - 0.09)^{(t)}$$

A  $t = \frac{\ln \frac{248}{300}}{\ln(1 - 0.09)}$

B  $t = \frac{\ln 248 \cdot 300}{\ln(1 - 0.09)}$

C  $t = \frac{\ln \frac{248}{300}}{\ln(1 + 0.09)}$

2 Rearrange this equation to solve for the time given this model of a decline of a whale population (yearly breeding cycle)?

$$235 = 500 \cdot (1 - 0.09)^{(t)}$$

A  $t = \frac{\ln \frac{235}{500}}{\ln(1 - 0.09)}$

B  $t = \frac{\ln 235 \cdot 500}{\ln(1 - 0.09)}$

C  $t = \frac{\ln \frac{235}{500}}{\ln(1 + 0.09)}$

3 Rearrange this equation to solve for the time given this model of a decline of a bird population (yearly breeding cycle)?

$$620 = 700 \cdot (1 - 0.02)^{(t)}$$

A  $t = \frac{\ln 620 \cdot 700}{\ln(1 - 0.02)}$

B  $t = \frac{\ln \frac{620}{700}}{\ln(1 + 0.02)}$

C  $t = \frac{\ln \frac{620}{700}}{\ln(1 - 0.02)}$

4 Rearrange this equation to solve for the time given this model of a decline of a bird population (yearly breeding cycle)?

$$772 = 900 \cdot (1 - 0.03)^{(t)}$$

A  $t = \frac{\ln \frac{772}{900}}{\ln(1 + 0.03)}$

B  $t = \frac{\ln 772 \cdot 900}{\ln(1 - 0.03)}$

C  $t = \frac{\ln \frac{772}{900}}{\ln(1 - 0.03)}$

5 Rearrange this equation to solve for the time given this model of a decline of a bird population (yearly breeding cycle)?

$$244 = 300 \cdot (1 - 0.05)^{(t)}$$

A  $t = \frac{\ln \frac{244}{300}}{\ln(1 - 0.05)}$

B  $t = \frac{\ln 244 \cdot 300}{\ln(1 - 0.05)}$

C  $t = \frac{\ln \frac{244}{300}}{\ln(1 + 0.05)}$

6 Rearrange this equation to solve for the time given this model of a decline of a bird population (yearly breeding cycle)?

$$461 = 500 \cdot (1 - 0.02)^{(t)}$$

A  $t = \frac{\ln \frac{461}{500}}{\ln(1 - 0.02)}$

B  $t = \frac{\ln \frac{461}{500}}{\ln(1 + 0.02)}$

7 Rearrange this equation to solve for the time given this model of a decline of a whale population (yearly breeding cycle)?

$$470 = 500 \cdot (1 - 0.03)^{(t)}$$

A  $t = \frac{\ln \frac{470}{500}}{\ln(1 - 0.03)}$

B  $t = \frac{\ln \frac{470}{500}}{\ln(1 + 0.03)}$

8 Rearrange this equation to solve for the time given this model of a balance of a charitable endowment (yearly disbursements)?

$$346 = 500 \cdot (1 - 0.04)^{(t)}$$

A  $t = \frac{\ln \frac{346}{500}}{\ln(1 - 0.04)}$

B  $t = \frac{\ln \frac{346}{500}}{\ln(1 + 0.04)}$

C  $t = \frac{\ln 346 \cdot 500}{\ln(1 - 0.04)}$