



Exponential Function Solving - Decay (Continuous) - Scenario to Time

1

What is the value of the time given this scenario?

A bird population starts at 900. It declines continuously at 2% per quarter. After a certain number of quarters it has decreased to a population of 798.

$$t^A = 4 \text{ quarters} \quad t^B = 8 \text{ quarters}$$

$$t^C = 6 \text{ quarters} \quad t^D = 5 \text{ quarters}$$

2

What is the value of the time given this scenario?

A toxin starts at a concentration of 500mg/L. It declines continuously at 7% per hour. After a certain number of hours it has decreased to a concentration of 266mg/L.

$$t^A = 7 \text{ hours} \quad t^B = 9 \text{ hours}$$

$$t^C = 10 \text{ hours} \quad t^D = 11 \text{ hours}$$

3

What is the value of the time given this scenario?

A radioactive material starts at an isotope concentration of 500ppm. It decays continuously at 8% per week. After a certain number of weeks it has decayed to an isotope concentration of 285ppm.

$$t^A = 5 \text{ weeks} \quad t^B = 6 \text{ weeks}$$

$$t^C = 7 \text{ weeks} \quad t^D = 9 \text{ weeks}$$

4

What is the value of the time given this scenario?

A whale population starts at 700. It declines continuously at 6% per quarter. After a certain number of quarters it has decreased to a population of 518 whales.

$$t^A = 5 \text{ quarters} \quad t^B = 7 \text{ quarters}$$

$$t^C = 4 \text{ quarters} \quad t^D = 6 \text{ quarters}$$

5

What is the value of the time given this scenario?

A whale population starts at 800. It declines continuously at 5% per year. After a certain number of years it has decreased to a population of 723 whales.

$$t^A = 3 \text{ years} \quad t^B = 4 \text{ years}$$

$$t^C = 1 \text{ year} \quad t^D = 2 \text{ years}$$

6

What is the value of the time given this scenario?

A toxin starts at a concentration of 600mg/L. It declines continuously at 9% per hour. After a certain number of hours it has decreased to a concentration of 319mg/L.

$$t^A = 7 \text{ hours} \quad t^B = 5 \text{ hours}$$

$$t^C = 6 \text{ hours} \quad t^D = 8 \text{ hours}$$

7

What is the value of the time given this scenario?

A bacteria population starts at 400. It declines continuously at 7% per week. After a certain number of weeks it has decreased to a population of 262 bacteria.

$$t^A = 6 \text{ weeks} \quad t^B = 4 \text{ weeks}$$

$$t^C = 8 \text{ weeks} \quad t^D = 5 \text{ weeks}$$

8

What is the value of the time given this scenario?

A bird population starts at 800. It declines continuously at 5% per year. After a certain number of years it has decreased to a population of 723.

$$t^A = 1 \text{ year} \quad t^B = 3 \text{ years}$$

$$t^C = 4 \text{ years} \quad t^D = 2 \text{ years}$$