



## Graphing Exponential Functions: Identifying Data that Display Exponential Behavior

The number of bacteria in a dish can be represented by the equation  $y = 30(2)^t$ , where  $y$  is the number of bacteria in  $t$  hours.

After 5 hours there are  bacteria in the dish.



An amount of AED 8,000 was invested at 6% interest that is compounded yearly. The equation

$A = 8,000(1.06)^t$  represents the value  $A$  of the investment at time  $t$  years.

Find the worth of the investment when  $t = 7$ . Round your answer to the nearest thousand.

Enter your answer in the space provided.

The investment will be worth about AED  after 7 years.

The population of a city can be represented by the equation  $P = 90,000(0.98)^t$ , where  $P$  is the population at time  $t$  years.

Find the population when  $t = 9$ . Round your answer to the nearest thousand.

Enter your answer in the space provided.

The population of the city will be about  after 9 years.



An amount of AED 1,000 was invested at 3% interest that is compounded yearly. The equation

$A = 1,000(1.03)^t$  represents the value  $A$  of the investment at time  $t$  years.

Find the worth of the investment when  $t = 31$ . Round your answer to the nearest hundred.

Enter your answer in the space provided.

The investment will be worth about AED  after 31 years.

The population of a city can be represented by the equation  $P = 24,000(0.97)^t$ , where  $P$  is the population at time  $t$  years.

Find the population when  $t = 6$ . Round your answer to the nearest thousand.

Enter your answer in the space provided.

The population of the city will be about  after 6 years.



An amount of AED 3,000 was invested at 5% interest that is compounded yearly. The equation

$A = 3,000(1.05)^t$  represents the value  $A$  of the investment at time  $t$  years.

Find the worth of the investment when  $t = 23$ . Round your answer to the nearest thousand.

Enter your answer in the space provided.

The investment will be worth about AED  after 23 years.