Quinton just read that his new computer, which costs $2,500, loses 10% of its value every year. Which function can be used to determine the value of his computer after x years?

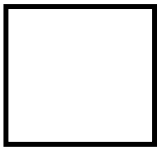
A $f(x) = 2{,}500(.10)^x$

C $f(x) = 10(2{,}500)^x$

B $f(x) = 2{,}500(1.1)^x$

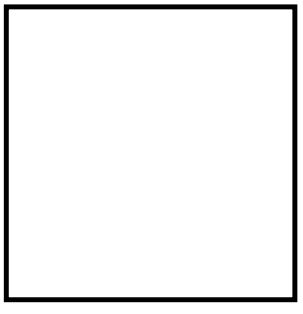
D $f(x) = 2{,}500(.90)^x$

D



A fashion blog has 22,000 page views so far. In addition, that number continues to grow 25% every week. How many page views will the blog have in 2 weeks?

34,375 pages viewed



The half-life of a radioactive kind of element is 18 minutes. There are currently 32 grams of the element. Which function can be used to determine the amount remaining after x minutes?

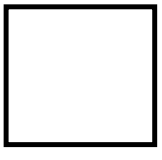
A $f(x) = 18(.5)^{\frac{x}{32}}$

B $f(x) = 32(18)^{\frac{x}{2}}$

C $f(x) = 32(.5)^{\frac{x}{18}}$

D $f(x) = .5(32)^{\frac{x}{18}}$

C



A gallery owner has a painting whose value is increasing by 12% per year. They have had the painting for 4 years and the value is currently $58,220.22. How much did they originally pay for it?

$ 37,000

There is a population of 5 bacteria in a colony. If the number of bacteria doubles every 31 minutes, what will the population be 93 minutes from now?

40

In Austin, the use of landlines has been declining at a rate of 20% every year. There are 51,000 landlines this year. Which function can be used to determine the number of landlines after x years?

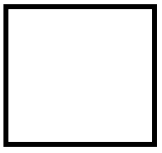
A $f(x) = 51{,}000(0.8)^x$

B $f(x) = 51{,}000(0.2)^x$

C $f(x) = 20(51{,}000)^x$

D $f(x) = 51{,}000(1.2)^x$

A



Andrew deposited $40 in a savings account earning 5% interest, compounded quarterly. To the nearest cent, how much will he have in 3 years?

$ 46.43

Based on past experiences, a homeowner estimates that appliances lose 35% of their resale value each year. If the estimate is accurate, how much will a refrigerator currently valued at $2,100 be worth in 8 years?

$ 66.92

A table of values for the exponential function f is shown below.

x	0	1	2	3
$f(x)$	45,000	47,250	49,612.50	52,093.12

Which situation could describe this function?

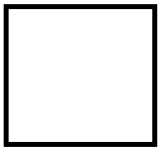
A An employee receives a bonus of \$2,250 each year.

B The value of a car depreciates by 5% each year.

C The value of a car remains constant for 5 years.

D An employee receives a salary increase of 5% each year.

D



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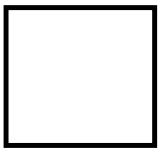

A social networking site currently has 70,000 active members. If the sites loses 5% of its active members each month, how many active members can the site expect to have in 12 months?

~ 37,825

A video posted on the internet has gone viral, and the total number of views is increasing by 13% every hour. If the video currently has 52,000 views, how many views will it have in 4 days?

6,479,386,968

Average health premiums have been increasing at a rate of 9.3%.If an average family's premiums are $14,000 this year, what will they be in 9 years?

$ 31,168.04

A cup of hot water that is currently 56°C above room temperature is left out to cool. If the heat difference decreases by 4% every minute, what will the difference be in 19 minutes?

25.8°

A comic book collector has a first-edition comic currently worth $370. He anticipates it will grow in value at a rate of 15% per year. How much will this comic book be worth 12 years from now?

$ 1979.59

The Galveston Opera House sold 45,000 tickets this year, but it has been experiencing a 10% drop in sales from one year to the next. If this trend continues, how many tickets will the opera house sell 10 years from now?

15,691 tickets

A species of insect is approaching extinction. If the population is falling by 5% every year and there are currently 8,700 insects remaining, how many will there be in 5 years?

6731 insects

Amaya is studying for final exams and just drank a cup of coffee to help her stay awake. The coffee had 91 milligrams of caffeine in it. If her body processes 11% of the caffeine every hour, how much caffeine will be left in 4 hours?

The number of customers at a retail kiosk store has been falling 5% per month. If the store had 10,000 customers this month, how many should it expect to have 6 months from now?

Northbrook University charges $35,000 for tuition. If they raise their tuition by 10% each year, how much will tuition be in 10 years?

Noah lives in Houston, where the cost of living increases by 5% every year. If Noah spends $34,000 this year, how much can he expect to spend 3 years from now to maintain the same standard of living?

The flu is starting to hit Spring Branch. Currently, there are 120 people infected and is growing at a rate of 5% per day. How many people will have gotten the flu in 5 days?

Rodrigo has put $9,800 into a retirement fund that has an estimated annual return of 5%. If Rodrigo doesn't add any more money, how much can he expect to have in the fund in 15 years?

Felisa currently brings in an annual salary of $45,000 and anticipates a raise of 5% every year. What will her salary be in 7 years?

Bradley is purchasing a new car for $37,000. If the car loses 20% of its value every year, how much will the car be worth in 7 years?

The community theater in Sugarland has been seeing a 5% drop in attendance every year. If they sold 29,000 tickets this year, how many tickets can they expect to sell 4 years from now?