Name _____ Date _____

Exponential Decay - Guided Lesson Explanation

Explanation#1

The initial value of hub is $14,000

The decay rate is 5% or 0.05.

Exponential equation is $y = a (1 - r)^t$

Now put the values in equation and solve the equation.

$y = 14,000 (1 – 0.05)^7$

$y = 14,000 (0.95)^7$

$y = 14,000 (0.69833729609375)$

$y = 9776.72$

So, the value of the hub in year 2005 is $9,776.72.

Explanation#2

The equation $y = a (1 - r)^t$,

Where a is the initial value, r is the rate where $0 < 1 – r < 1$, and t is time.

The model $y = 15t^2$ and $y = 8 + 15t$ are linear and quadratic models. So, they are not exponential models.

In the model $y = 7 (1.85)^t$, Here $1 – r = 1.85$ and $1.85 > 1$.

So, this is not an exponential decay model.

Now check $y = 16,000 (0.68)^t$, Here $1 – r = 0.68$ and $0 < 0.68 < 1$

So, the model $y = 16,000 (0.68)^t$ is an exponential model.

Name _____ Date _____

Explanation # 3

The initial value of the wallet is $500

The decay rate is %1 or 0.01.

Exponential equation is $y = a\ (1 - r)^t$

Now put the values in equation and solve the equation.

$y = 500\ (1 - 0.01)^8$

$y = 500\ (0.99)^8$

$y = 500\ (0.9227446944279201)$

$y = 461.37$

So, the value of the wallet after 8 months will be $461.37.