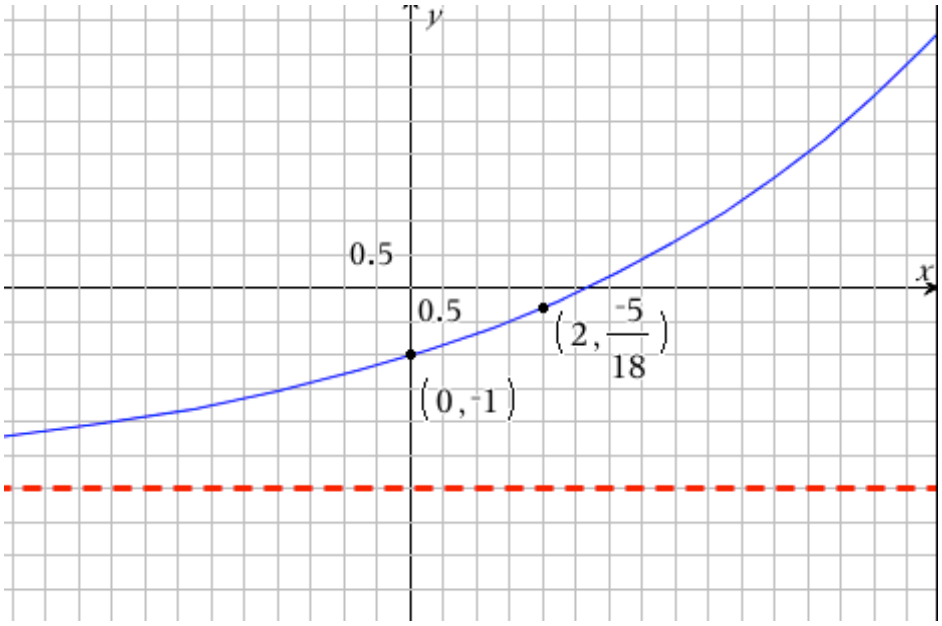
HAT

Chapter 7 REVIEW

12/11/17

Write an equation for this exponential equation.



Simplify (NC)

a. $\ln e^{\log_7 49^4}$

b. $\log_{25} 125$

c. $\log_9\left(\ln\left(\log 10^{e^{27}}\right)\right)$

Solve. (WC)

a. $\frac{1}{2}e^{4x} \bullet \frac{1}{e^{12}} = 9$

b. $\frac{400}{1+e^{-x}} = 350$

c. $\left(\log_3 x\right)^2 - \log_3 x^6 = 27$

(WC)
The half-life of Claytonium is 4 years. Determine the equation of decay for Claytonium.

A teacher examining a potential graduate estimates that

the student contains only about 15% as much Claytonium as he would have contained when he entered Clayton. How long ago did the student enter Clayton?

Determine the amount of money that should be invested at 2.4% interest, compounded continuously to produce a final balance of $30,000 in 15 years. (WC)

(NC)
For how many integers between 1 and 20 can the natural logarithms be approximated given that $\ln 2 \approx 0.6931$?

$\ln 3 \approx 1.0986$

$\ln 5 \approx 1.6094$

(WC)
The population of Las Vegas in 1990 was 258,000 and 478,000 in 2000. Find the exponential growth model,

$$y = ae^{kt}$$

for the population of Las Vegas.

Predict the population in 2010.

(NC)

Graph each function.

$$f(x)=\log_3(x+4)-2 \qquad f(x)=-4\left(\frac{1}{2}\right)^{x-2}+5$$

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