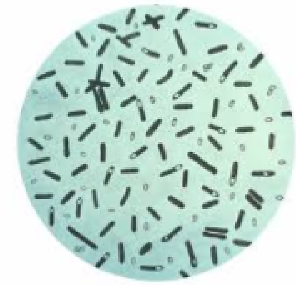
Using a microscope, a researcher observed and recorded the number of bacteria spores on a large sample of uniformly sized pieces of meat kept at room temperature. A summary of the data she recorded is shown in the table below.



Hours (x)	Average Number of Spores (y)
0	4
0.5	10
1	15
2	60
3	260
4	1130
6	16,380

Regents Practice!!!

3 dec. places

Using these data, write an exponential regression equation, rounding all values to the *nearest thousandth*. The researcher knows that people are likely to suffer from food-borne illness if the number of spores exceeds 100. Using the exponential regression equation, determine the maximum amount of time, to the *nearest quarter hour*, that the meat can be kept at room temperature safely.

ExpReg
y=a*b^x
a=4.167983971
b=3.980619454
r²=.9988281588
r=.9994139076

$y = 4.168(3.981)^x$

X	Y1
1.5	33.107
1.75	46.764
2	66.056
2.25	93.306
2.5	131.8
2.75	186.17
3	262.97

X=3

2.25

The following set of data shows US gas prices in recent years.

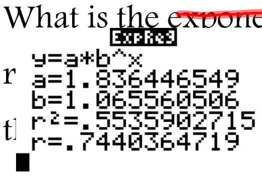
Based on the table, what was the average rate of change in the price of gasoline from 2005 to 2014, to the nearest thousandth? Use appropriate units for your answer.

$\frac{3.33-1.78}{14-5}$ .1722222222

$\frac{3.33-1.78}{2014-2005} = \$.172/\text{yr.}$

Year	Price ($)
2005	1.78
2006	2.24
2007	2.33
2008	3.11
2009	1.68
2010	2.67
2011	3.07
2012	3.29
2013	3.29
2014	3.33

What is the exponential regression for the data in the table, r... ts to the nearest thousandth. [Use x=1 for t...



$y = 1.836(1.066)^x$

Based upon your regression equation, what is the average rate of change in the price of gasoline from 2005 to 2014, to the nearest thousandth? Use appropriate units for your answer.

Why is there a difference between your answers using the table and using the regression equation?