1A Exponential Models

t	3	5	6	8	9	11
g	1.04	1.49	1.79	2.58	3.1	4.46

1. The table above shows some data collected on the temperature, in °C, of a colony of bacteria (t), and its growth rate (g).

    The data are coded using the changes of variable $x = t$ and $y = log g$. The regression line of y on x is found to be:

    $y = -0.2215 + 0.0792x$

a) Mika says that the constant -0.2215 in the regression line means that the colony is shrinking when the temperature is 0°C. Explain why Mika is wrong.

b) Given that the data can be modelled by an equation of the form $g = kb^t$, where k and b are constants, find the values of k and b.