

Problem Solving with Exponential Growth and Decay

For each equation:

1. Identify the initial value.
2. Identify if we are looking at growth or decay.
3. Identify percent growth or percent decay.

$y = 4 \times 1.5^x$	$y = 850 \times 1.05^x$
<p>initial value = 4 growth $\Rightarrow b = 1.5$ percent growth = 50%</p>	<p>initial value = 850 growth $\rightarrow b = 1.05$ % growth = 5%</p>
$y = 1000 \times 1.25^x$	$y = 15,000 \times 1.01^x$
<p>initial value = 1000 growth $\rightarrow b = 1.25$ % growth = 25%</p>	<p>initial value = 15000 growth $b = 1.01$ % change = 1%</p>
$y = 6 \times 0.5^x$	$y = 64 \times 0.25^x$
<p>initial value = 6 decay $\rightarrow b = 0.5$ % decay = 50%</p>	<p>initial value = 64 decay $\rightarrow b = 0.25$ % decay = $1 - 0.25 = 0.75$ 75%</p>
$y = 25,000 \times 0.81^x$	$y = 1,000 \times 0.05^x$
<p>initial = 25,000 decay $\rightarrow b = 0.81$ % decay = $100 - 81 = 19\%$</p>	<p>initial = 1000 decay $\rightarrow b = 0.05$ % decay = $100 - 5 = 95\%$</p>