Exponentials- Study Guide

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| 1. Label and explain the following exponential equations:
 |
| 1. $y=ab^{x}$
 | 1. $y=a\left(1\pm r\right)^{x}$
 | 1. $y=ab^{x-h}+k$
 |

Determine whether the table represents an *exponential growth function*, an *exponential decay function*, *linear*, or *neither*. Make sure to explain your reasoning.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| --- | --- | --- | --- | --- |
| *x* | 0 | 1 | 2 | 3 |
| *y* | 2 | 4 | 12 | 48 |

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| --- | --- | --- | --- | --- |
| *x* | 0 | 1 | 2 | 3 |
| *y* | 270 | 90 | 30 | 10 |

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| --- | --- | --- | --- | --- |
| *x* | -1 | 0 | -1 | -2 |
| *y* | -4 | 0 | 4 | 8 |

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Find the value of *a,b, and r.* Determine whether the data represents an *exponential growth function*, an *exponential decay function*. Make sure to explain your reasoning.

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| 1. $y=3\left(.85\right)^{x}$
 | 1. $y=3\left(1-.3\right)^{x}$
 | 1. $y=2\left(1.4\right)^{x}$
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| 1. Graph

TA: C:\cur_proj\Word Files\Arts\PNGs\HSAlg1_ab_0600_001.png  |

|  |  |
| --- | --- |
| **X** | **Y** |
| -4 |  |
| -2 |  |
| 0 |  |
| 2 |  |
| 4 |  |

 |  |
| 1. TA: C:\cur_proj\Word Files\Arts\PNGs\HSAlg1_ab_0600_002.png Graph
 |

|  |  |
| --- | --- |
| **X** | **Y** |
| -4 |  |
| -2 |  |
| 0 |  |
| 2 |  |
| 4 |  |

 |  |

Evaluate the function for the given value of *x*.

|  |  |  |  |
| --- | --- | --- | --- |
| 1.
 | 1.
 | 1. $y=-4\left(2\right)^{x} ;x=-3$
 | 1. $f\left(x\right)=5(3)^{x} ;x=0$
 |

Write an equation to model the situation. Be sure to label the parts of your equation.

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| --- | --- | --- | --- |
| 1. You are brushing your teeth and you have 4 bacterial. They double every hour.
 | 1. You have 5 weeds in the yard. They triple every hour.
 | 1. There are 3 zombies. They increase by 10% every hour.
 | 1. There were once 1,000 dodo birds. Their population was cut down by 15% every day.
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