Zombie Outbreak

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| --- | --- | --- |
| Each day, a zombie infects 2 new people | Each day, the zombie learns how to infect 2 more people than they did the previous day before | Each day every Zombie Infects someone new |

  

|  |  |  |
| --- | --- | --- |
| Equation: | Equation: | Equation: |
| How many Zombies Day 20? | How many zombies day 20? | How many Zombies day 20? |

**Now, let’s compare the different functions. Graph all 3 functions on the same graph. For purposes of the following questions, connect the points for each graph. Use a different color for each function and label them.**

**What do each of the functions have in common?**

**Which function increases at the fastest rate?**

**When is the linear function larger than the other 2 functions, if ever?**

**When is the quadratic function larger than the other 2 functions, if ever?**

**When is the exponential function larger than the other 2 functions, if ever?**

**When do the functions intersect each other?**

**Over time, is there one function that is always larger than the other 2 functions? If so, which function is it?**

**Using each of the models created, determine how many days it will take for the zombies to wipe out ….**

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| --- | --- | --- | --- |
| **Situation** | **Equation** | **Equation** | **Equation** |
| **Pebblebrook High School** |  |  |  |
| **Atlanta** |  |  |  |
| **Georgia** |  |  |  |
| **The United States** |  |  |  |
| **The world** |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Compare** | **Linear** | **Quadratic** | **Exponential** |
| **Domain** |  |  |  |
| **Range** |  |  |  |
| **x-int** |  |  |  |
| **y-int** |  |  |  |
| **Increase** |  |  |  |
| **Decrease** |  |  |  |
| **End Behavior** |  |  |  |
| **Max/Min?** |  |  |  |
| **Asymptote** |  |  |  |



Exponential

Linear

Quadratic