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| **Question** | **Exponential Growth or Decay?** | **Write a function that represents this situation** | **Answer:** |
| http://www.lietaer.com/wp-content/uploads/2010/09/money.jpg1. You buy a house for $130,000. It appreciates 6% per year. How much is it worth in 10 years? |  | **Initial Amount =** |  |
| **Growth/Decay Rate:**  Percent = Decimal = |
| Function that represents this situation: |
| https://fbcdn-sphotos-a-a.akamaihd.net/hphotos-ak-prn1/555542_720482764639_906539314_n.jpg2. Mr. MD is losing 20% of his hair each year ☺ If he currently has 1,546 hairs on his head, about how many hairs will he have left after 10 years? |  | **Initial Amount =** |  |
| **Growth/Decay Rate:**  Percent = Decimal = |
| Function that represents this situation: |
| 3. If you invest $40 in an account for 10 years at a 3% interest rate how much money will you have? |  | **Initial Amount =** |  |
| **Growth/Decay Rate:**  Percent = Decimal = |
| Function that represents this situation: |
| 4. A population of 100 frogs increases at an annual rate of 22%. How many frogs will there be in 5 years? |  | **Initial Amount =** |  |
| **Growth/Decay Rate:**  Percent = Decimal = |
| Function that represents this situation: |
| http://cdn2.disneybaby.com/images/2012/01/nemo-plush-character-photo-1800x1800-dcp-200837.jpg5. A species of extremely rare, deep water fish are slowly becoming extinct. If there are a total 821 of this type of fish and there are 15% fewer fish each month, how many will there be in half a year? |  | **Initial Amount =** |  |
| **Growth/Decay Rate:**  Percent = Decimal = |
| Function that represents this situation: |
| 6. The population of Austin is growing at a rate of 5% per year. In 2010, the population was 500,000. What would be the predicted current population? |  |  |  |
| 7. Use the equation from the previous question and predict in what year Austin’s population will first reach 1,000,000. |  | | |
| 8. A mouse population is 25,000 and is decreasing in size at a rate of 20% per year. What is the mouse population after 3 years? |  |  |  |
| 9. A super-deadly strain of bacteria is causing the zombie population to double every 2 days. Currently, there are 25 zombies. After how many days will there be 25,600 zombies?  ***(Careful with this one!!!)*** |  |  |  |
| 10. Use the function from the previous question. If the current population of our planet is 5,000,000,000 people, after how many days will there be no humans left? | http://c3e308.medialib.glogster.com/media/43/43b620edd74ea9952868ad3457cf58426a98191abddbfda929233bbaaee5cec0/stock-vector-halloween-zombie-cartoon-66565621-1-jpg.jpg | | |