

6. [7 points] The Go Blue Zoo breeds its own insect populations for feeding some of the birds and reptiles. However, a virus infected the cricket breeding program on January 1, 2023. The cricket population started at 1,000,000 crickets, but decreased by 15% per week once the colony was infected.

- a. [3 points] How many weeks did it take for the population to decrease by 60%? *Show all work. Give your answer in exact form, or accurate to at least two decimal places.*

_____ weeks

- b. [2 points] By what percentage did the cricket population decrease for each *day*? *Show all work. Give your answer in exact form, or accurate to at least two decimal places.*

Decreases by _____ % per day.

- c. [2 points] If the population instead decayed at a *continuous* rate of 15% per week, by what *non-continuous* percentage would it decrease in one week? *Show all work. Give your answer in exact form, or accurate to at least two decimal places.*

Decreases by _____ % per week.