

5. [9 points]

- a. [3 points] The golden lion tamarin is an endangered species. However, due to conservation efforts, the number of wild golden lion tamarins has been increasing. There were 450 golden lion tamarins in the wild in 1990, and their population has grown by about 5.2% per year since then.² Let $L(y)$ be the number of wild golden lion tamarins y years after 1990. Find a formula for $L(y)$.

Answer: $L(y) =$

- b. [3 points] The value of a typical new car decreases by about 9% per year. Find a formula for $V(t)$, the value of a car, in thousands of dollars, t years after purchase if its value when originally purchased was \$25,000.

Answer: $V(t) =$

- c. [3 points] Before concrete to pave a driveway starts to be poured, a concrete mixer contains 40,000 pounds of concrete. If paving 54 square inches of the driveway uses 25 pounds of concrete, find a formula for $C(d)$, the amount, in pounds, of concrete remaining in the mixer after d square inches of the driveway have been paved.

Answer: $C(d) =$

²Source: <http://www.animalinfo.org>