Pre-Calc AB Worksheet #48 : Answers

1a. Decreasing due to negative exponent.

1b. 2000; population of 2430 thousand. 2003; population of 2408.951 thousand

1c. About 2019

2. 5,309,734 hits

3. 3.15 hours

4a. $V = -6394t + 30,788$

4b. $V = 30,788e^{-0.268t}$

4c. The exponential model depreciates faster

4d. Linear: $V(1) = 24,394$, $V(3) = 11,606$. Exponential: $V(1) \approx 23,550$, $V(3) \approx 13,779$

4e. Advantage to buyer, linear model, doesn't depreciate as fast, less profit for seller. Disadvantage to buyer, exponential model, depreciates faster, more profit for seller.

5a. Use window $70 \leq x \leq 115$ and $0 \leq y \leq 0.04$

5b. 100

6a. 203 animals

6b. 13 years

6c. $y = 0$ and $y = 1000$; the popluation size will approach 1000 as time increase.

7. 3:00 AM