

## Quiz9

December 8, 2006

Name: \_\_\_\_\_

Note: Each problem is worth 25 points, so the maximum grade you can get is 100 points. *Good Luck!!*

(1) The number of a certain species of fish is modeled by the function  $n(t) = 12e^{0.012t}$ , where  $t$  is measured in years and  $n(t)$  is measured in millions. a) What is the relative rate of growth of the fish population? Express your answer as a percentage. b) What will the fish population be after 5 years?

(2) After how many years will the number of fish reach 30 million?

(3) Find the  $n$ th term of a sequence whose first several terms are given below.

a) 2, 4, 6, 8, ...

b)  $\frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}, \dots$

(4) Find the sum.

a)  $\sum_{k=1}^4 k^2$

b)  $\sum_{i=1}^3 i2^i$