2) 2009 = 6.9 billion
- Will double in 50 years
N_T = 13.8 billion
N_0 = 6.9 billion
r = ?
t = 50 years

$N_T = N_0 e^{rt} \Rightarrow \frac{\ln[N_T/N_0]}{t} = r$

a. $\frac{\ln[13.8/6.9]}{50} = r \Rightarrow \frac{\ln 2}{50} = r = 0.014$ per year

b. r = 0.014
N_0 = 6.9 billion
N_T = ?
t = 41 years

$N_T = N_0 e^{rt} = 6.9\text{bil}\, e^{(0.014)(41)} = 6.9\text{bil} \cdot 1.7753$

$N_T = 1.25 \times 10^{10}$ people