

Chapter 4: The Human Population and the Environment

Review Questions

1. How does the loss of population in Indonesia demonstrate the power of exponential population growth?
2. What is shown by an age structure diagram such as that on the top left of page 59? What can be learned by comparing age structure diagrams such as those at the top of that page?
3. Study “Working it Out 4.1” on page 58 and be prepared to perform calculations using the equations presented there. What is the difference between crude rate and percent rate?
4. Explain one important economic implication of age structure.
5. Study figure 4.3 - what are some interesting things you notice about population change over time? How have different continents changed differently over the past 200 years?
6. What is demonstrated by figure 4.4?
7. According to the text, what is the current world population and growth rate?
8. What general relationship is there between national wealth and population growth rates?
9. Why is it that no population can sustain an exponential rate of growth indefinitely?
10. What assumptions does logistic growth have that are unrealistic for animals?
11. What are some problems with using logistic growth to make predictions about human population growth?
12. Describe what occurs at each stage of the demographic transition.
13. Describe what is meant by the equation shown at the bottom right of page 64.
14. Who was Malthus and what was his “Prophecy?”
15. Contrast chronic and acute diseases? Under what conditions do acute disease tend to kill more individuals than chronic diseases?
16. Summarize some examples of recent concerns related to infectious diseases.

17. What is the difference between maximum lifetime and life expectancy? How do these figures differ now compared to ancient Rome?
18. What is a limiting factor? Give examples of some short-term, intermediate-term, and long-term factors.
19. Briefly describe three strategies for lowering birth rates
20. Please be sure you have mastered the meanings of each of the bold words in the chapter (not just the ones included in these questions).