

Cunningham 8e Answers to Practice Quizzes

Chapter 1

1. Global populations are rising, but in the future they should stabilize, although at what level and when depends on fertility changes. Fertility rates are falling everywhere, and the global average has declined from 5 to less than 2.5 children per woman.
2. Ecological services include many factors and resources we rely on. Often they're described in terms of provisioning, regulating, supporting, and cultural services. Climate regulation, water filtration, and food provision are a few examples.
3. A hypothesis is a testable, provisional explanation. A scientific theory is an explanation supported by a large body of empirical evidence and regarded by a majority of scientists as likely to be correct.
4. The scientific method involves 1) identifying a question, 2) forming a testable hypothesis, 3) collecting data, 4) interpreting results, 5) reporting results for peer review, 6) publishing findings. See figure 1.4.
5. Probability is a measure of how likely something is to occur. An example is flipping a coin. Each toss has a 50% probability of landing on a particular side.
6. Scientists try to reserve judgment because they know that better evidence could emerge from future tests or evidences. Thus they try to be skeptical of evidence and to look for solid, unbiased evidence. This is also why tests require replication: one test result could be an accident or an outlier. Many tests are better than a few.
7. The first step in critical thinking is to ask, "What is the purpose of my thinking?"
8. Utilitarian conservation is pragmatic, efficient resource use for the greatest good for the greatest number for the longest time. Gifford Pinchot and Teddy Roosevelt were leaders in this movement. Biocentric preservation emphasizes the right of other organisms—and nature as a whole—to exist regardless of their usefulness to us. John Muir was a leading proponent of this philosophy.
9. Water is a critical resource because 1.1 billion people lack access to clean water, 15 million people die annually from diseases linked to polluted water or inadequate sanitation, and by 2025, the U.N. warns, three-quarters of all humans may live in water-stressed countries.
10. In figure 1.5, the most dramatic warming occurs at high latitudes, especially northern Canada, Siberia, and parts of the Arctic Ocean.
11. The ratio of per capita income is about 52:35 (or a little less than 5:3) for North America: East Asia. For North America:South Asia, the ratio is about 52:2 (or about 25:1).
12. The poorest people are often both the victims and agents of environmental degradation. Forced to meet short-term survival needs at the cost of long-term sustainability, they suffer most from environmental damage because they have few other options.
13. Sustainability is a search for ecological stability and human progress that can last over the long term. Sustainable development is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs."