tion that is used for the regions being compared. (See Exercise 17.) A population of 1,000,000 people with the same composition as the United States is often used as the standardized population. Adjusted rates are valuable for comparing different regions, but they do not necessarily reflect the true crude death rates. Adjusted rates should not be used as death rates and they should not be compared to crude rates.

When assessing the accuracy of rates, we should consider the source. Mortality rates found in a source such as the *Statistical Abstract of the United States* (compiled by the U.S. Bureau of the Census) are likely to be quite accurate, because each state now has a mandatory death reporting system. However, morbidity rates are likely to be less accurate, because some diseases are known to be underreported or not reported at all. Some morbidity rates might be the result of very questionable surveys. However, some surveys, such as the annual National Health Survey, involve large samples of people who are very carefully chosen, so that the results are likely to be very accurate.

3-7 Exercises

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Finding Rates. In Exercises 1–8, use the data given below. Then find data from the U.S. Census Bureau to find the indicated rates. Round results to one decimal place, and use a multiplying factor of $k = 1000$ unless indicated otherwise.

Vital Statistics for the United States in One Year

Population: 285,318,000
Deaths: 2,416,000
Live births: 4,026,000
Deaths of infants under 1 year of age: 27,500
Deaths of infants under 28 days of age: 18,000
Motor vehicle deaths: 43,900
Women aged 15-44: 61,811,000
Fetuses delivered without life after 20 weeks of gestation: 39,900
HIV infected persons: 900,000
Deaths from HIV infections: 17,402

1. Find the neonatal mortality rate.
2. Find the fetal mortality rate.
3. Find the perinatal mortality rate.
4. Find the crude birthrate.
5. Find the general fertility rate.
6. Using a multiplier of $k = 100{,}000$, find the motor vehicle death incidence rate.
7. Find the HIV incidence rate.
8. Find the HIV mortality rate for HIV-infected persons.
9. Finding Probability An example in this section involved the crude mortality rate, which was found to be 8.5 persons per 1000 population. Find the *probability* of randomly selecting someone and getting a person who died within the year. What advantage does the crude mortality rate have over the probability value?