

## Programming Project 3, Chapter 7

### Problem

The rate of decay of a radioactive isotope is given in terms of its half-life  $H$ , the time lapse required for the isotope to decay to one-half of its original mass. The isotope strontium-90 ( $^{90}\text{Sr}$ ) has a half-life of 28 years. Compute and print in table form the amount of this isotope that remains after each year for  $n$  years, given the initial presence of an amount in grams. The values of  $n$  and  $amount$  should be provided interactively. The amount of  $^{90}\text{Sr}$  remaining can be computed by using the following formula:

$$r = amount * C^{(y/H)}$$

where  $amount$  is the initial amount in grams,  $C$  is expressed as  $e^{-0.693}$  ( $e = 2.71828$ ),  $y$  is the number of years elapsed, and  $H$  is the half life of the isotope in years