**Title**: Decay

**Purpose**: To calculate the amount of radioactivity remaining after a period of time has elapsed

**Theory**: All radioactive nuclides decay in accordance with the Law of Radioactive Decay (At=Ao x e-λt) where At is the activity at the time you’re interested in, Ao is the original activity when the source was manufactured, t is the amount of time between the source “birthdate” and the time you’re interested in, and λ is the decay constant for the radionuclide and is equal to the natural logarithm of 2 divided by the nuclide’s half-life. These calculations are performed by the spreadsheet.

**You enter**: You will have to enter the information in the unshaded columns (the radionuclide and its half-life in years, the source “birthdate” and its original activity. Please note that you can enter the source activity in whichever units you’d like. Several radionuclides have been entered as examples; if you’re interested in a different radionuclide you’ll have to look up its half-life and enter it in years in Column B or in days in Column C.

**The spreadsheet**: Calculates the source activity for the day you perform the calculations. The spreadsheet will automatically set the date for “today” (the day you are performing these calculations), but you can enter a different date manually if you would like.

**In addition**: If you’d like to calculate the source activity at some time in the future (say, in six months), enter the future date in column F (Today’s Date). You can also calculate the decay rate (in DPM or DPS – Bq) by multiplying the value in Column H (At) by the appropriate conversion factor following note 7.