Data Analysis: Measuring Half-Life of a Radioisotope

Name: _____   Teacher: _____   Date: _____

Using the data collected from the Measuring Half-Life of a Radioisotope virtual lab, complete the following steps to make a graph of Ba-137m atoms versus time (in minutes).

1. On a sheet of graph paper, draw intersecting x- and y-axes with the origin located in the bottom left corner.

2. Label the y-axis: Count of Ba-137m atoms.

3. Label the x-axis: Time (in minutes).

4. Plot the points from the data table as an ordered pair (x,y).
   ● The 'x' is equal to Time (in minutes).
   ● The 'y' is equal to Ba-137m Count.

5. Draw a smooth, best-fit CURVE through the data points.

6. Find the point on the y-axis where the number of Ba-137m atoms is exactly one-half of the atoms at time = zero.

7. Starting at the one-half value (determined in Step 6) on the y-axis, draw a line parallel to the x-axis until the line reaches the best-fit curve.

8. When the parallel line reaches the curve, draw a vertical line DOWN to the x-axis.

9. The point at which the vertical line intersects the x-axis is the time required for half the nuclei of the Ba-137m radioisotope to decay.