The most useful graph in seeing what is happening is the 3D-Histogram. There are clearly two separate groups, one at higher pulse amplitudes and higher areas, and one at lower pulse amplitudes and lower areas. There are more data points in the lower areas, and they are more widely spread, with a number of points that have higher amplitudes yet lower areas present. This corresponds to the diagram given in the assignment, with gamma rays having the wider spread. So, I can conclude that gamma rays dominate at lower amplitudes, and neutrons at higher amplitudes.

For the second part, I imputed the differential equation in the problem, and put in the boundary conditions. When I graphed the solutions, no matter what R value I used, there was always very little proportional change in the very center by the end of the 12 hours. The max temperature is always R\*t. So, the best R will be one that has about 1˚C max value, or 1/12=.0833. The animation for this is attached.