Instructions. Put the first and last name of everyone in your workgroup at the top of your paper. Everyone is to do their own worksheet but only one from each group is graded with the score shared. Be sure to show your work and explain your reasoning.

1. The blob doubles its size every 40 minutes. If it weighs 2 pounds now, when will it be a ton (2000 lbs)?

2. Technetium-99m is a radioactive isotope used in medical imaging tests as a radioactive tracer. It has a half-life of about 6 hours. What percentage of the isotope will remain after 24 hours?

3. Your extra thick maple syrup tends to spread out in a circle about 1/8 inch thick. If you pour out the syrup at a rate of 1.8 cubic inches per second (that’s just under 2 tablespoons a second) how fast is the radius of the pool of syrup increasing when it is 1 inch? What about 5 inches (that is probably too much syrup!)?

4. A plane is 200 miles due North of an airport and traveling due North at 140 mph. Another plane is 120 miles North-East of the airport and heading straight in for an eventual landing but its instrument panel is not working. The first plane has radar and determines that the distance between the two planes is increasing at 95 mph. How fast is the second plane traveling?