NAME _____ DATE _____

Algae Attack

On April 1, a fast growing species of algae is accidentally introduced into a lake. It starts to grow and cover the surface of the lake in such a way that the area covered by the algae doubles every day. If it continues to grow, the lake will be totally covered, endangering the wildlife dependent on the lake. At the rate it is growing, this will happen on April 30.

a. When will the algae cover half of the lake? Explain how you arrived at your answer.

b. On April 26, a student who walks by the lake every day warns that the lake will be completely covered soon. Her friend just laughs. Why might her friend be skeptical of the warning?

c. On April 29, biologists arrive at the lake and remove almost all of the algae. They are not able to remove all of the algae, and estimate that 0.5% of the surface is still covered with algae. Considering the pattern of growth, have the biologists solved the problem of algae growth covering the lake? Create a mathematical representation of the situation and justify your answer.