Projectile Lab - Chapter 7

Use the Heights of a Softball data in the following table:

Time (seconds)	Height (feet)	Time (seconds)	Height (feet)
0.00	3.3994	0.32	4.4545
0.02	3.5650	0.34	4.4077
0.04	3.7271	0.36	4.3393
0.06	1.5000	0.38	4.2925
0.08	4.0620	0.40	4.2024
0.10	4.1340	0.42	4.0980
0.12	4.1916	0.44	3.9900
0.14	4.2709	0.46	3.8711
0.16	4.3429	0.48	3.7379
0.18	4.4005	0.50	3.5903
0.20	4.4473	0.52	3.4354
0.22	4.4797	0.54	3.2662
0.24	4.4977	0.56	3.0861
0.26	4.5049	0.58	2.9061
0.28	4.5013	0.60	2.7044
0.30	4.4797		

Analyzing the Data

1. Let $h = f(t)$ be the height (in feet) of the softball at t seconds. Use a graphing calculator to draw a scattergram of the softball data.
2. Should the graph of your model come close to (0.06,1.5)? Explain.
3. Find an equation of f.
4. Use a graphing calculator to draw a graph of your model and the scattergram in the same viewing window. Also, graph the model and scattergram by hand. How well does f model the data?
5. Use your equation of f to estimate when the softball reached the ground.
6. What is the h-intercept of your model? What does it mean in this situation?
7. Use your model to estimate the height of the softball at 0.7 second.
8. Use your model to estimate the height of the softball at 10 seconds.
9. For what values of t is there model breakdown? Explain.
10. Use your model to estimate when the softball reached its maximum height. What was the maximum height?