Exam #3, Math 8, Dr. M. Bohner, Apr 2, 99.

Name:

1. Let $f(x) = \frac{2x^2}{9-x^2}$. Is f symmetric? Find the domain of f, the x and y intercepts, the asymptotes, the intervals where f is increasing, decreasing, concave upwards, and concave downwards, respectively, the local extrema, the inflection points, and sketch the graph of f.

2. Party. You are at the point $(0, 1)$, the bar is the interval $[0, 1]$ on the x-axis. Suddenly you see your neighbor who is standing at $(1, 2)$. You want to go to talk to him, but first go to the point $(p, 0)$ at the bar and grab a drink (i.e., go straight from $(0, 1)$ to $(p, 0)$ and then straight from $(p, 0)$ to $(1, 2)$). Draw a picture of the scene and describe the travel distance as a function of p. How long is the minimal (in case your neighbor is a good friend) and the maximal (in case your neighbor isn't such a good friend) travel distance?