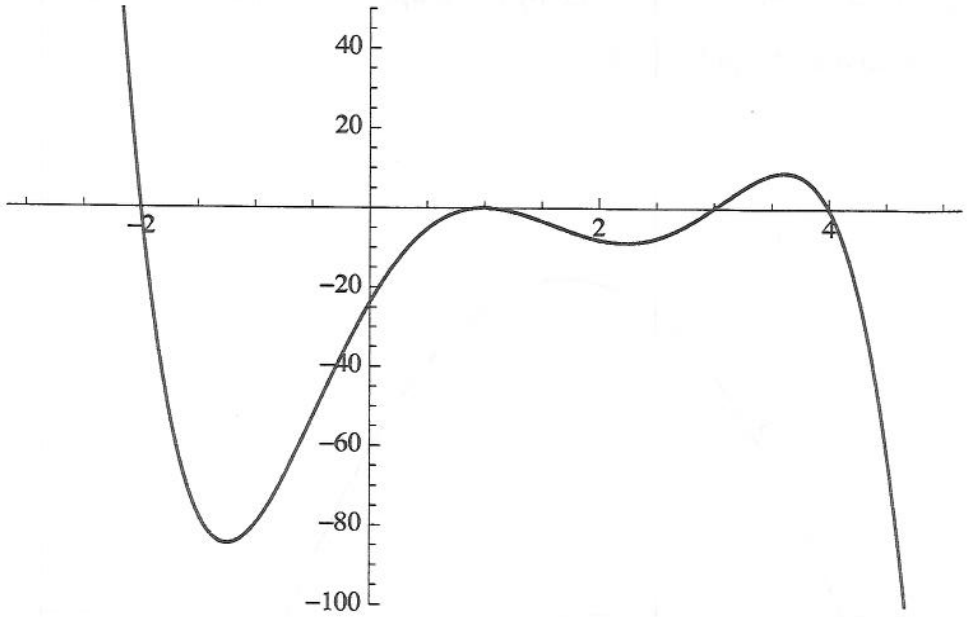
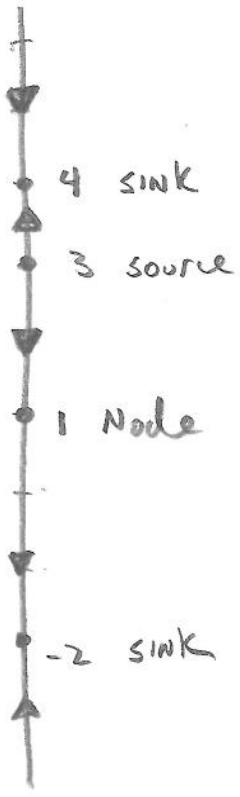
Name: Prof. Dontl Date: _____

MA 226 Quiz 4 – B

Please show your work.

1. (5 pts) The graph of $f(y)$ is given below. Sketch the phase line for the autonomous differential equation $\frac{dy}{dt} = f(y)$. Indicate if the equilibrium points are sources, sinks or nodes.





Name: Prof Dentel Date: _____

2. (5 pts) Locate the bifurcation value(s) for the one parameter family given below and draw the phase lines for values of the parameter smaller than, equal to, and larger than the bifurcation value(s).

$\frac{dy}{dt} = f(y) + \alpha$ where $f(y)$ is given by the graph below. Note that the vertex of the graph is located at the point (2,9).