Name: ______________________________

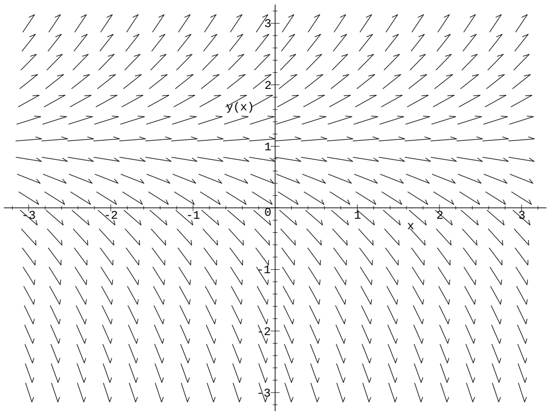
Mathematics 8

Homework Assignment #1 Supplement

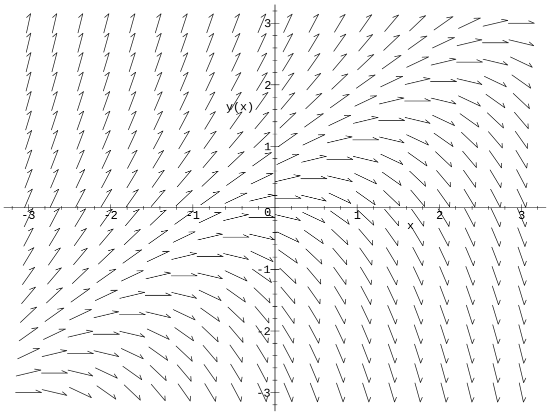
1 – 4. Consider the slope fields given below. Match the differential equation with the appropriate slope field, and justify your answers.

1. $dy/dx = y - 1$ 2. $dy/dx = y^3 - x^3$ 3. $dy/dx = y^2 - x^2$ 4. $dy/dx = y - x$

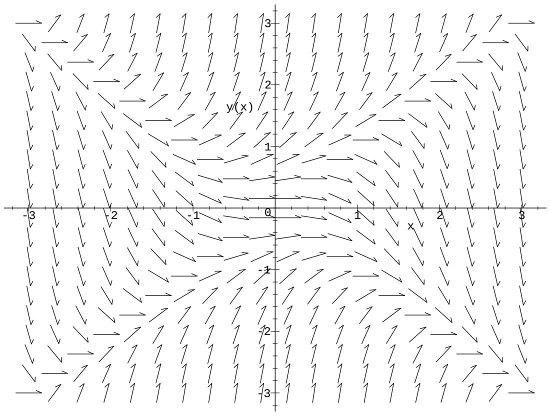
Example 1



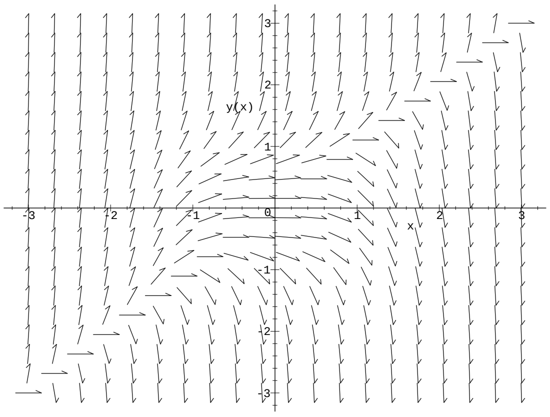
Example 2



Example 3



Example 4



5 – 8. On each of the slope fields above, sketch the graphs of solutions which satisfy $y(0) = 1$, $y(0) = 0$, and $y(0) = -1$. The units are from -3 to $+3$ on both x and y axes.

9. Draw a slope field for the differential equation $dy/dx = x - y$, and draw a couple of solution curves.