Mathematics 11
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. \( \frac{dy}{dx} = y - 1 \)  
2. \( \frac{dy}{dx} = y^3 - x \)
3. \( \frac{dy}{dx} = y^2 - x^2 \)  
4. \( \frac{dy}{dx} = y - x \)

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 \( \frac{dy}{dx} = x - y \), and draw a couple of solution curves.