Name: _____ **Section:** _____

Names of collaborators: _____

Read p 585-587, up to and including Example 1.

Exercises.

1. Consider the differential equation $y' = x - y + 1$.

   (a) Make a table of **at least 24** slope values for this differential equation, and sketch the direction field.

   (b) Use part (a) to sketch **four significantly different** solution curves below.

2. Answer the questions below.

3. Figure 10.19 is the slope field for the equation $y' = x+y$.

(a) Sketch the solutions that pass through the points

(i) $(0,0)$ (ii) $(-3,1)$ (iii) $(-1,0)$

(b) From your sketch, guess the equation of the solution passing through $(-1,0)$.

(c) Check your solution to part (b) by substituting it into the differential equation.

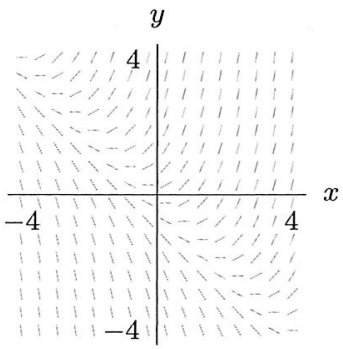

Figure 10.19: Slope field for $y' = x + y$

3. Answer the question below, and **give reasons** for your choices.

6. Match the slope fields in Figure 10.21 with their differential equations:

(a) $y' = -y$ **(b)** $y' = y$ **(c)** $y' = x$
(d) $y' = 1/y$ **(e)** $y' = y^2$

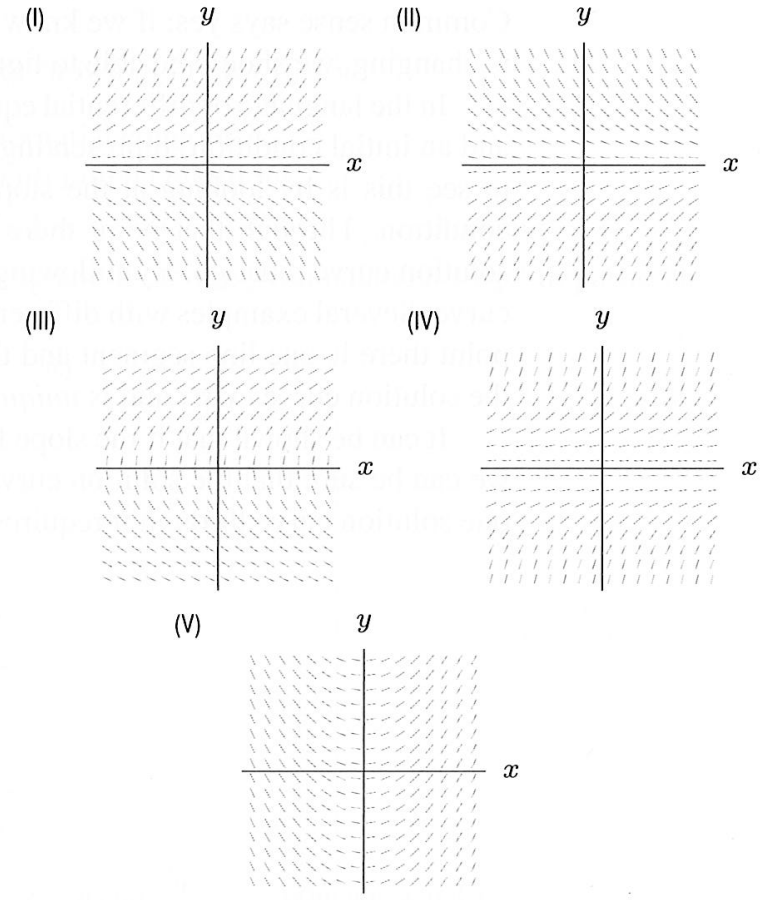

Figure 10.21