

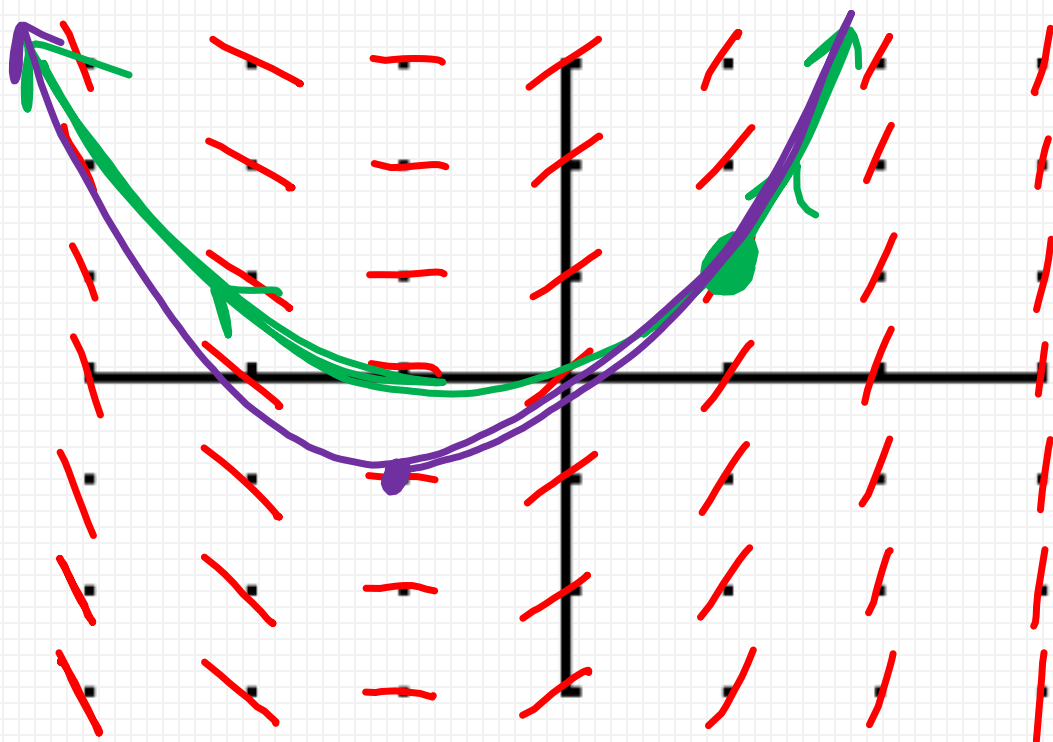
Slope Fields

Section 6.1

What is a slope field?

A VISUAL REPRESENTATION OF SOLUTION CURVE(S) OF A DIFF. EQ.

1. $\frac{dy}{dx} = x + 1$



Draw a solution curve thru $(1,1)$.

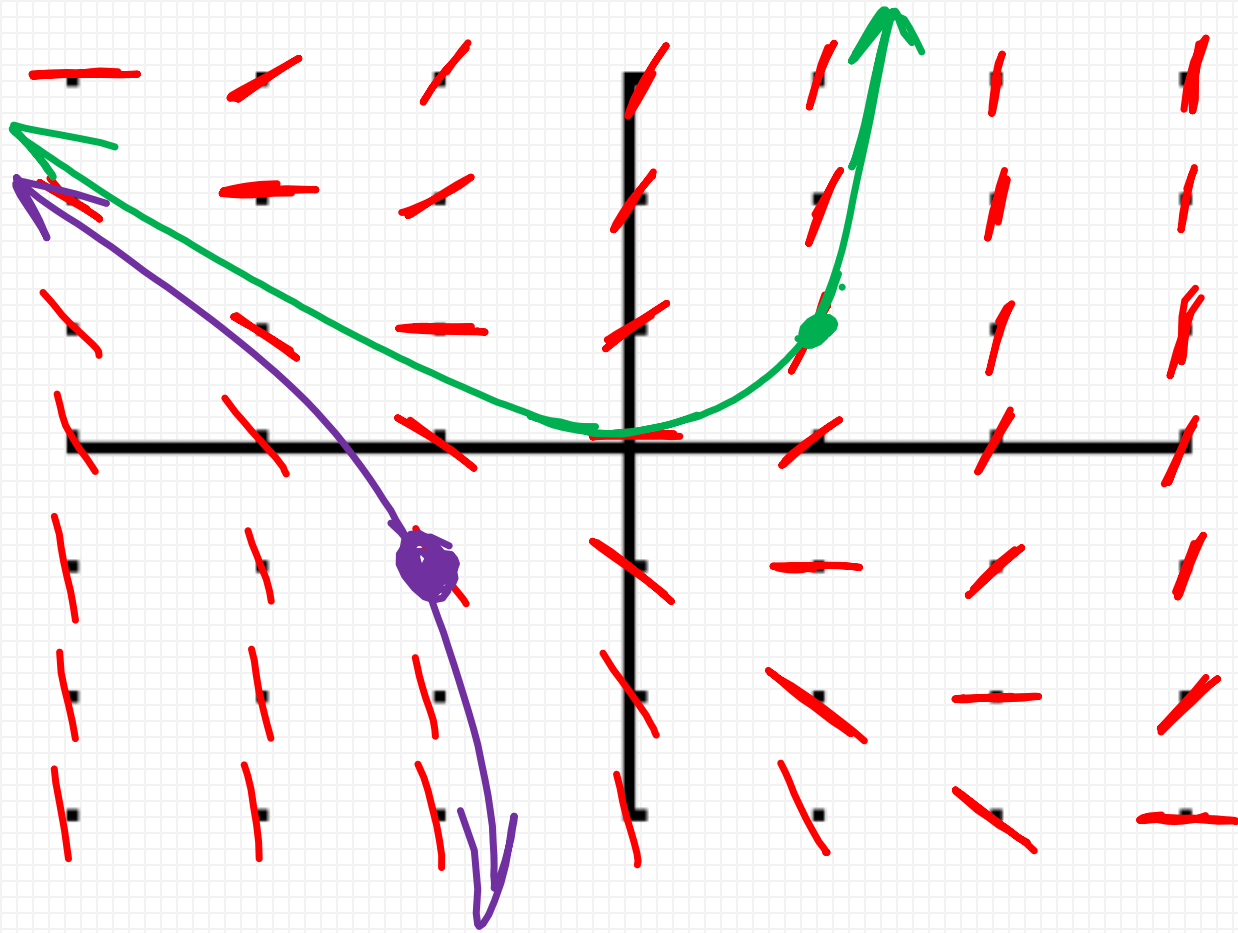
Find the solution curve thru $(1,1)$.

$$\begin{aligned} dy &= (x+1) dx \\ y &= \frac{1}{2}x^2 + x + C \\ 1 &= \frac{1}{2}(1)^2 + (1) + C \\ C &= -\frac{1}{2} \end{aligned}$$

$$\begin{aligned} y &= \frac{1}{2}x^2 + x - \frac{1}{2} \\ y &= \frac{1}{2}(-1)^2 + (-1) - \frac{1}{2} \\ &= -1 \end{aligned}$$



3. $\frac{dy}{dx} = x + y$



Draw a solution curve thru (1,1).

Draw a solution curve thru (-1,-1).



Homework:

Slope Field Handout – do all

* On page 1, also find the general solution if possible.

