

GUIDED NOTES: SLOPE FIELDS

Vocabulary

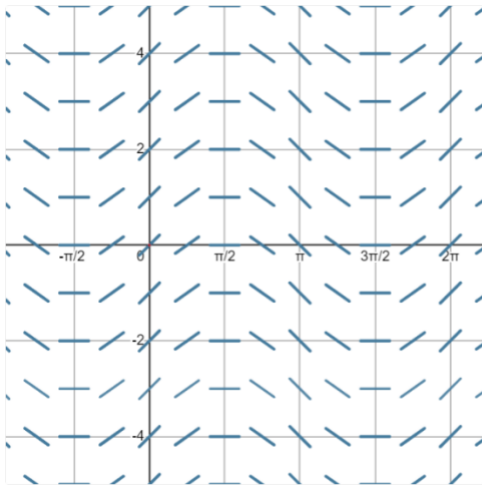
- differential equation:

- lineal element:

- slope field (direction field):

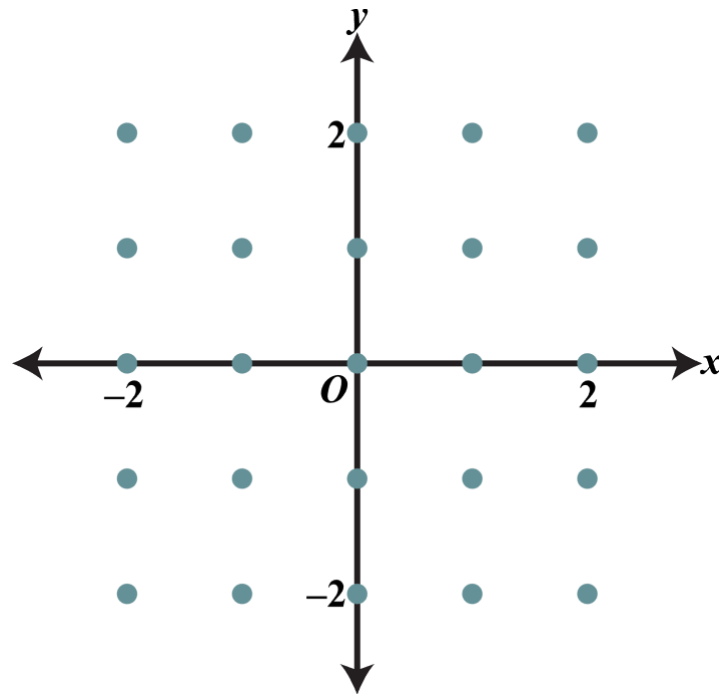
Example Problems

- 1) Use the given slope field to find the general solution of the differential equation: $\frac{dy}{dx} = \cos x$.



general solution:

2) Plot the slope field for the differential equation: $\frac{dy}{dx} = x + y$. Sketch a reasonable solution using the initial condition: $(2, 0)$.



$(-2, 2) \Rightarrow$ $(-1, 2) \Rightarrow$ $(0, 2) \Rightarrow$ $(1, 2) \Rightarrow$ $(2, 2) \Rightarrow$

$(-2, 1) \Rightarrow$ $(-1, 1) \Rightarrow$ $(0, 1) \Rightarrow$ $(1, 1) \Rightarrow$ $(2, 1) \Rightarrow$

$(-2, 0) \Rightarrow$ $(-1, 0) \Rightarrow$ $(0, 0) \Rightarrow$ $(1, 0) \Rightarrow$ $(2, 0) \Rightarrow$

$(-2, -1) \Rightarrow$ $(-1, -1) \Rightarrow$ $(0, -1) \Rightarrow$ $(1, -1) \Rightarrow$ $(2, -1) \Rightarrow$

$(-2, -2) \Rightarrow$ $(-1, -2) \Rightarrow$ $(0, -2) \Rightarrow$ $(1, -2) \Rightarrow$ $(2, -2) \Rightarrow$