Q1

1 Point

The partial fraction decomposition of $\frac{t^2-2}{(t+1)^2(t^2+1)}$ should be of the form

- $\frac{At}{(t+1)^2}+\frac{Bt+C}{t^2+1}$
- $\frac{A}{(t+1)}+\frac{B}{(t+1)^2}+\frac{C}{t^2+1}$
- **$\frac{A}{(t+1)}+\frac{B}{(t+1)^2}+\frac{Ct+D}{t^2+1}$**

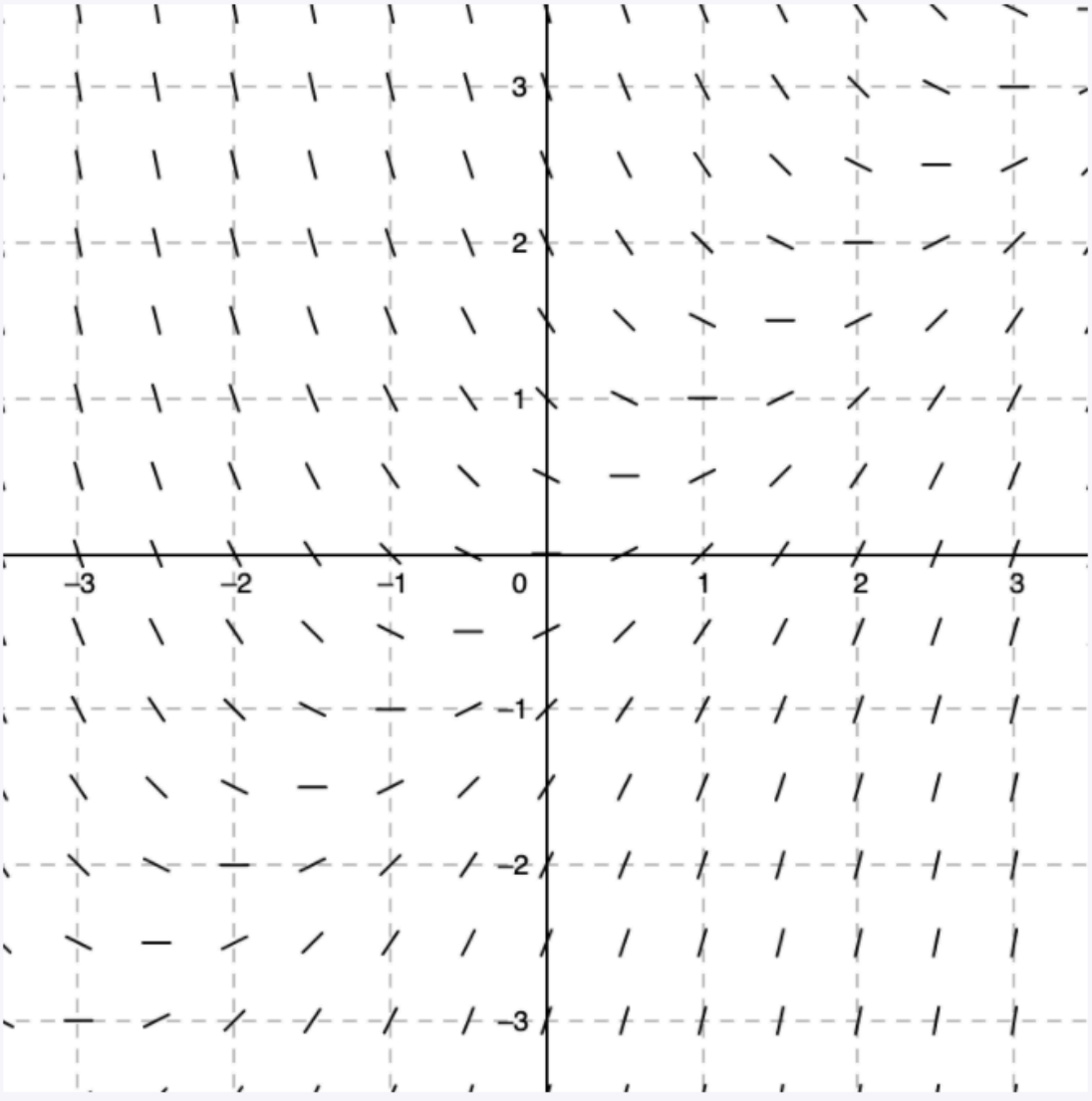
Q2

3 Points

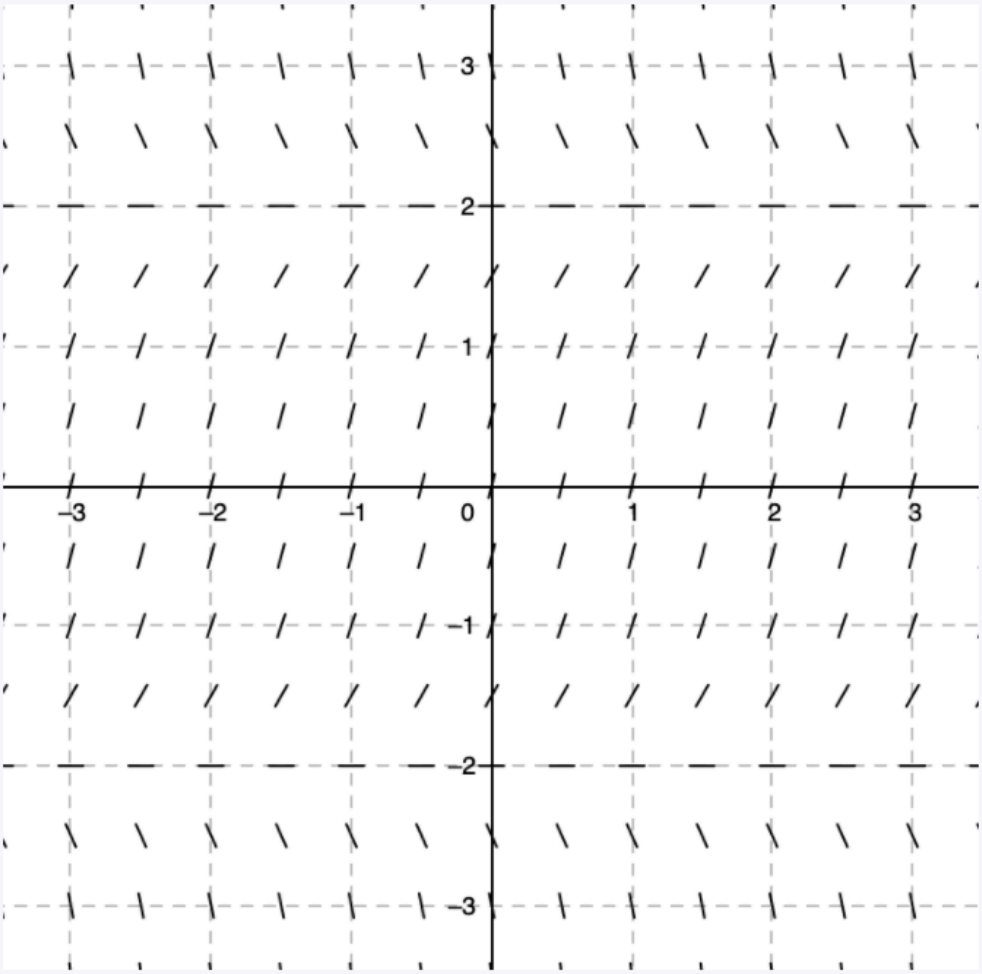
Match the following differential equations with their direction fields.

A: $y'=2-y$
B: $y'=(y+2)(2-y)$.
C: $y'=t-y$

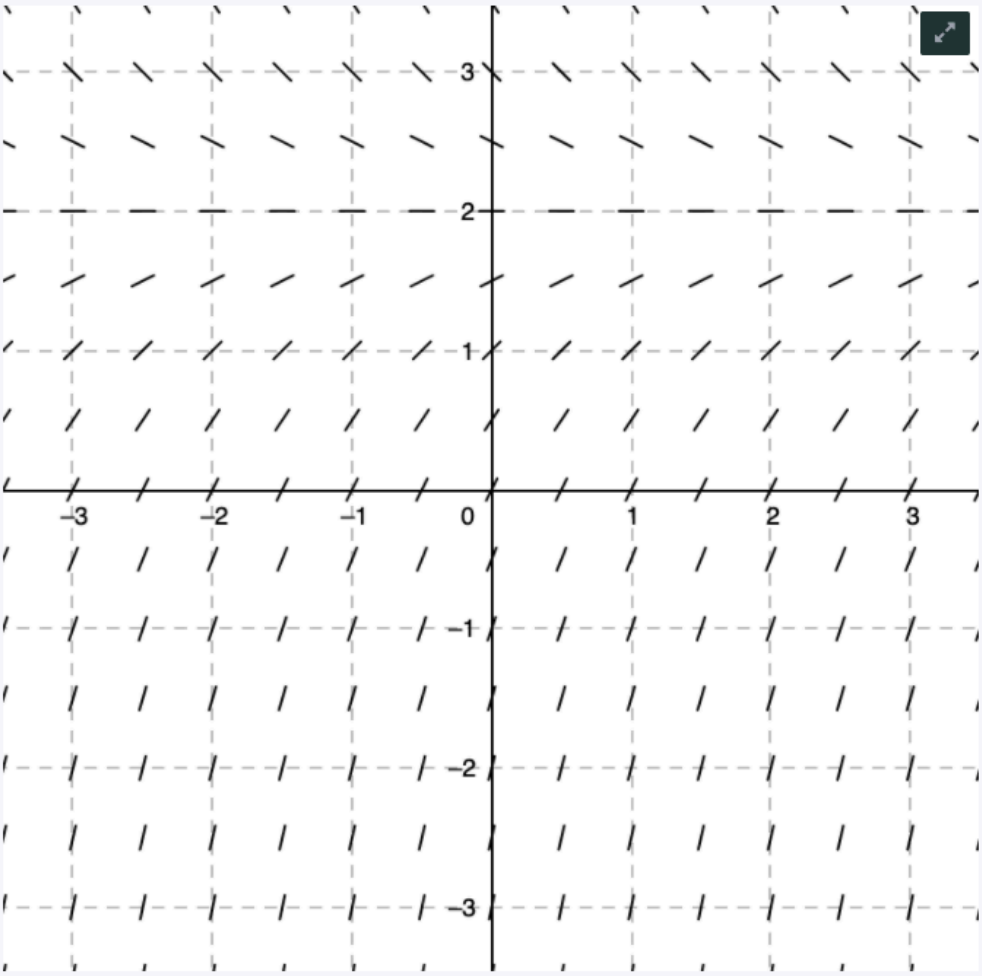
(1)



(2)



(3)



Q3

6 Points

Solve the following initial value problem

$$ty' + 2y = \sin(t), \quad y(\pi) = 0$$