1. Using the known Maclaurin series expansion of \( \cos(x) = \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n}}{(2n)!} \), find a Taylor series representation of the following.
   (a) \( \cos(2x) \)
   (b) \( x^3 \cos(-x) \)

2. Which of the following is a solution to \( \frac{dy}{dx} = y^2 - x^2 - 1 \)
   (a) \( y = x \)
   (b) \( y = -x \)
3. Match the following differential equations with their slope fields.

(i) \( \frac{dy}{dx} = x^2 \)
(ii) \( \frac{dy}{dx} = y^2 \)
(iii) \( \frac{dy}{dx} = y^2 + x^2 \)
(iv) \( \frac{dy}{dx} = y^2 - x^2 - 1 \)

Draw any two solution curves in each of the above slope fields.