1 Solve the initial-value problem G(A)

$y^2\,dx + (3xy + y^2 - 1)\,dy = 0$

with $y(1) = -1$

Find the orthogonal trajectories of a family of ellipses with center (0,0) and vertices (0,1), (0,-1)

Solve the initial-value Problem G(B)

$\frac{dy}{dx} + 2xy = y^2 e^{x^2} \ln x$ with $y(1) = 1$

Find the orthogonal trajectories of family of line Pass through an origion point.

Solve the initial-value problem G(C)

$(\tan x)\,dy + (y\sec^2 x + \sec x \tan x)\,dx = 0$

with $y(\frac{\pi}{4}) = 1$

Find the orthogonal trajectories of a family of Parabolas at vertices at (2,1) and focies at x-axis

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Q.1 Solve the initial-value problem G(A)

$3x^2 y\,dx + (-x^3 - 2y^4)\,dy = 0$

with $y(0) = 1$

Q.2 Find the orthogonal trajectories of the family of curves

$x^2 - y^2 = C$

Q.1 Solve the initial-value Problem G(B)

$(x \cos x)\frac{dy}{dx} + y(x \sin x + \cos x) = 1$

with $y(\pi) = 1$

Q.2 Find the orthogonal trajectories of the family of curves (circles) with center (0,1)

Q.1 Solve the initial-value Problem G(C)

$\frac{dy}{dx} - 2y \tan x = y^2 \tan^2 x$

with $y(\frac{\pi}{4}) = 1$

Q.2 Find the orthogonal trajectories of the family of curves

$x = Ce^{y^2}$