Orthogonal Trajectories

ORTHOGONAL
TRAJECTORIES

 

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Orthogonal trajectories, therefore, are two
families of curves that always intersect
perpendicula...

METHODS
Orthogonal Trajectories

Given family of curve

STEP 1

Eq 1

Find the differential equation for the given family ...

Orthogonal Trajectories

Example #1 Find the orthogonal trajectories of all parabolas with vertices at
the origin and foci...

Orthogonal Trajectories

STEP 3: Solving the differential equation by method of separation of variables

, family of ellip...

Example #2

Orthogonal Trajectories

Solution
STEP 1: Differentiate

STEP 2: Differential equation of the orthogonal traje...

Example #3

Orthogonal Trajectories

STEP 1:

STEP 2:
HOMOGENEOUS EQN.

 

Orthogonal Trajectories
Let

So,

 

Orthogonal Trajectories

Exponentiating both sides, we get:

 

Orthogonal Trajectories
Exercises:

THANK YOU!

 