

13.1 Vector Fields

Velocity Vector Fields

Definition of a Vector Field in \mathbb{R}^2 and \mathbb{R}^3

Example 1

Sketch the vector field $\vec{F}(x, y) = -y\vec{i} + x\vec{j}$

Example 2 - Newton's Law of Gravitation

Example 3 – Coulomb's Law

Gradient Fields

Example 4

Find the gradient vector field of $f(x, y) = x^3y - y^2$.

Conservative Vector Fields and Potential Functions

HW # 1, 5, 11-14, 21, 25, 29-32