**Theorems of integration**

Fundamental Theorem of Calculus:

Let be a differentiable function and be real numbers. Then:

Fundamental Theorem for Line Integrals (Fundamental Theorem for Conservative Vector Fields):

Let (or be a differentiable function. Let be a curve from to . Then,

Green’s Theorem:

Let be a 2-D vector field. Let be a pos. oriented, simple closed curve bounding .Then,

Stokes’ Theorem:

Let be a 3-D vector field. Let be an oriented surface with boundary curve . Assume the orientations on and coincide. Then,

Divergence Theorem:

Let be a 3-D vector field. Let be a closed surface oriented outward bounding . Then,