BRAC University

**MAT – 216**

**Vector Calculus Part 3**

**Surface Integral**

1. , S is the portion of the cylinder between the planes , and above the plane.
2. Evaluate , S is a part of the plane that lies above rectangle [0,3][0,2].
3. Evaluate where S is the portion of the plane in the 1st octant between and .
4. Evaluate , S is the portion of the cone below the plane .

**Divergence, Gradient, Curl**

1. Find the divergence of the vector field
2. , find the gradient of .
3. Find the divergence and the curl of the following vector fields:
4. **;** (ii)

**Green’s Theorem**

1. Evaluate where is the triangle with positively oriented vertices
2. Evaluate which is bounded by

in counter clockwise direction.

1. Evaluate which is bounded by the circle in clockwise direction.