19.2: Evaluating Flux Integrals
Calculus III
College of the Atlantic. Winter 2016

1. Consider a portion of a cylinder of radius 3 centered on the z axis, between $z = 0$ and $z = 2$. Set up an integral for the flux out of the cylindrical surface for each of the following vector fields:

$$\vec{F} = 3\vec{i} - 4\vec{j} + 5\vec{k} \ . \tag{1}$$

$$\vec{G} = z\vec{i} + y\vec{k} \ . \tag{2}$$

$$\vec{H} = z^2\vec{k} \ . \tag{3}$$

$$\vec{E} = y^2\vec{j} \ . \tag{4}$$

2. Which, if any, of the flux integrals are zero?