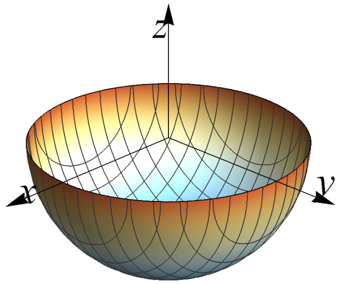
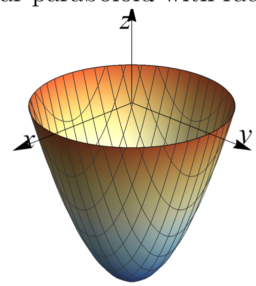
$\iint_S \mathbf{F} \cdot d\mathbf{S}$, where $\mathbf{F} = \langle 0, 0, 4x \rangle$, and S is the surface shown, a hemisphere of radius 3.



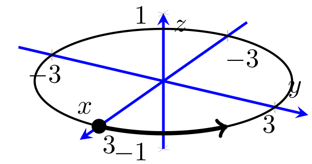
C

$\iint_S \mathbf{F} \cdot d\mathbf{S}$, where $\mathbf{F} = \langle 0, 0, 4x \rangle$, and S is the surface shown, a circular paraboloid with radius 3 at the top.



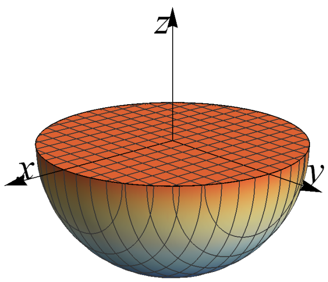
F

$\int_C \mathbf{F} \cdot \mathbf{T}\, ds$, where $\mathbf{F} = \langle -2xy, x^2, 1 \rangle$, and C is the curve shown.



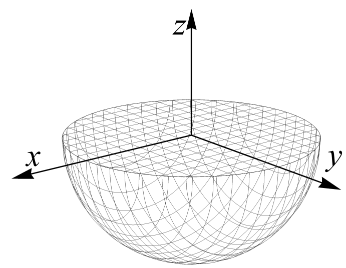
G

$\iiint_E 2y\, dV$, where E is the solid shown, half of a ball of radius 3.



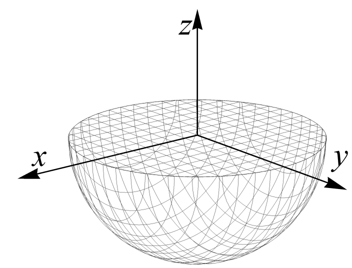
D

$\iint_S \mathbf{F} \cdot \mathbf{n}\, dS$, where $\mathbf{F} = \langle 2xy, x^2, 1 \rangle$, and S is the surface shown, the boundary of a hemispherical ball of radius 3.



A

$\iint_S \mathbf{F} \cdot \mathbf{n}\, dS$, where $\mathbf{F} = \langle 2zy, y^2, 1 \rangle$, and S is the surface shown, the boundary of a hemispherical ball of radius 3.



I

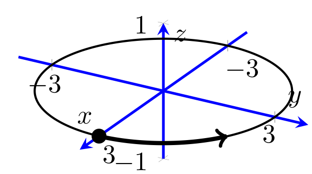
To evaluate this integral it is helpful to notice that $\mathbf{F}$ is a conservative field with potential function $f(x, y, z) = x^2 y + z$.

E

0

H

$\int_C \mathbf{F} \cdot \mathbf{T}\, ds$, where $\mathbf{F} = \langle 2xy, x^2, 1 \rangle$, and C is the curve shown.



B