1. Evaluate the surface integral $\iint_S (x+y+z)dS$, where S is the parallelogram with parametric equations $x = u+v$, $y = 1-v$, $z = 1+2u+v$, $0 \le u \le 2$, $0 \le v \le 1$.

2. Evaluate the surface integral $\iint_S (x^2 z + y^2 z)dS$ where S is the part of the plane $z = 4+x+y$ that lies inside the cylinder $x^2+y^2 = 4$.

3. Evaluate $\iint_S (x^2 + y^2 + z^2)dS$, S is the part of the cylinder $x^2+y^2 = 9$ between the planes $z = 0$ and $z = 2$, together with its top and bottom disks.

4. Find flux of the vector field $\mathbf{F} =< x, y, 5 >$ across the surface S which is the boundary of the region enclosed by the cylinder $x^2+z^2 = 1$ and the planes $y = 0$ and $x+y = 2$. Use positive (outward) orientation for S.

5. Evaluate the surface integral $\iint_S < x, y, 1 > \cdot d\mathbf{S}$ where S is the portion of the paraboloid $z = 1-x^2-y^2$ in the first octant, oriented by downward normals.

6. Evaluate $\iint \mathbf{F} \cdot d\mathbf{S}$, if $\mathbf{F} =< y, z-y, x >$, and S if the surface of the tetrahedron with vertices (0,0,0), (1,0,0), (0,1,0), and (0,0,1).

7. Use Stokes' Theorem to evaluate $\oint_C \mathbf{F} \cdot d\mathbf{r}$, where $\mathbf{F}(x, y, z) =< 3z, 5x, -2y >$ and C is the ellipse in which the plane $z = y+3$ intersects the cylinder $x^2+y^2 = 4$, with positive orientation as viewed from above.

8. Find the work performed by the forced field $\mathbf{F} = \left\langle -3y^2, 4z, 6x \right\rangle$ on a particle that traverses the triangle C in the plane $z = \frac{1}{2}y$ with vertices $A(2,0,0)$, $B(0,2,1)$, and $O(0,0,0)$ with a counterclockwise orientation looking down the positive z-axis.