

[12.6] - Surface Area

1. Set up and compute the surface area of the part of the surface $z = x^2 - y^2$ which is inside the cylinder $x^2 + y^2 = 9$.
2. Compute the surface area of the part of the surface $z = y^2$ about the triangle with vertices $(0, 1, 0)$, $(1, 0, 0)$, and $(1, 1, 0)$.
3. Compute the surface area of the part of the plane $\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = 1$ (where $a > 0$, $b > 0$, and $c > 0$) in the first octant ($x > 0$, $y \geq 0$, and $z \geq 0$). *Hint:* Start by determining where the plane intersects the x , y and z axes.