

1 | Tiling the Pringlehouse

As a review, our pringles shaped house has the following parametres:

$$\begin{cases} x(t) = 30\cos(t) \\ y(t) = 20\sin(t) \end{cases} \quad (1)$$

and the roof is defined by:

$$r(x, y) = \frac{1}{400} (\sqrt{3}x - y)^2 - \frac{1}{400} (\sqrt{3}y - x)^2 + 10 \quad (2)$$

We will first use the above parameterization to figure the area of the ellipse.

$$\vec{v}(x, y) = 30\cos(t)\hat{i} + 20\sin(t)\hat{j} + 0\hat{k} \quad (3)$$