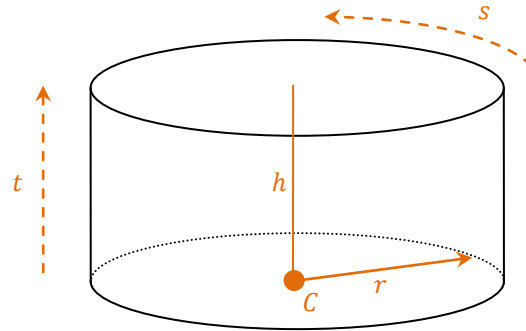


## Parametric Cylinder (Surface)

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The curved surface of a cylinder can be described in terms of  $x$ ,  $y$ , and  $z$  by introducing 2 parameters ( $s$  and  $t$ ). This equation describes the cylinder section pointing vertically with a center point  $C$ , a radius  $r$ , and a height of  $h$ .



$$\begin{aligned}x &= x_C + r \cdot \cos(2\pi \cdot s) \\y &= y_C + r \cdot \sin(2\pi \cdot s) \\z &= z_C + h \cdot t\end{aligned}$$

An example of the parametric equations defining the cylinder surface is shown below. The  $s$  and  $t$  values are sampled at an even interval yielding a consistent angular spacing and even vertical spacing.

