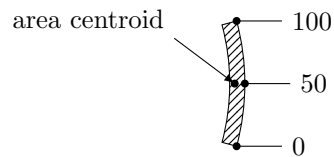
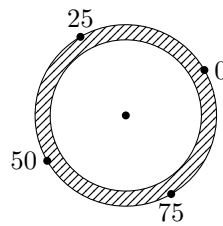
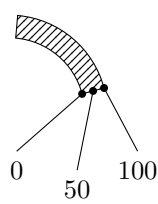


Polar boundaries and the true area centroid



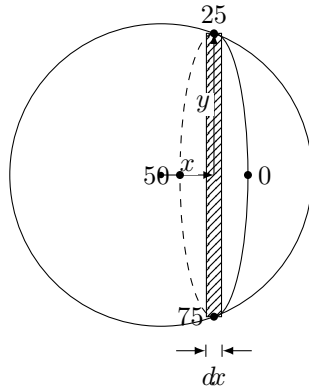
Large radii: $r = 3 \text{ cm}$, $r + dr = 3.2 \text{ cm}$

The outer family follows the arc counterclockwise. The start and end families run from the inner radius to the outer radius. A sector's placement centre is the circle centre; its area centroid is a separate anchor.

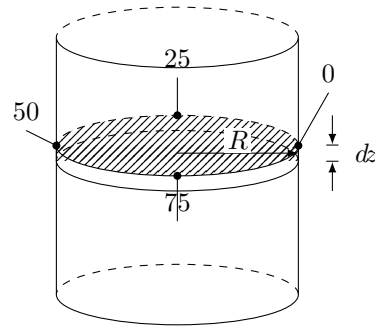


Rotated radial edge: inner to outer Full ring: centroid at its centre

Percentage coordinates on projected rims

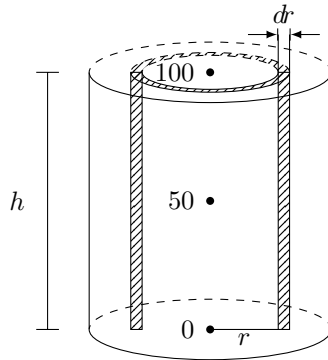


$$dV = \pi y^2 dx$$

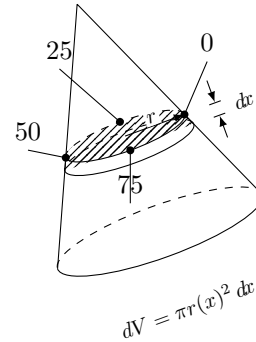


$$dV = \pi R^2 dz$$

Rim percentages run counterclockwise from the rightmost point of the displayed ellipse. They use pic coordinates, such as (C-slice-top-rim-25).



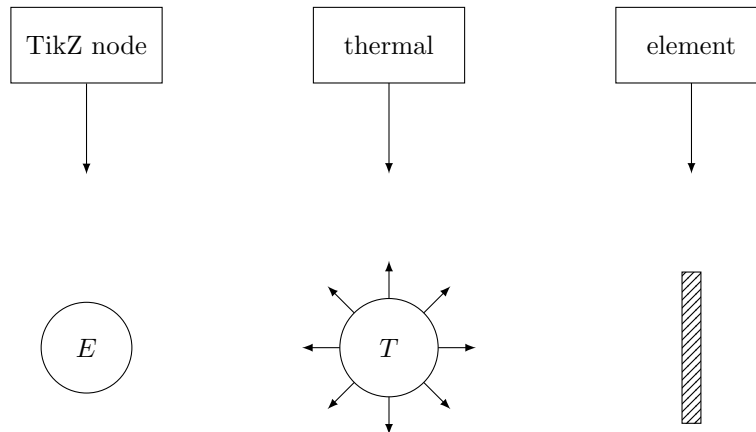
$$dV = 2\pi r h dr$$



$$dV = \pi r(x)^2 dx$$

Cylinder height coordinates measure the axial height between circle centres. Cone rim coordinates follow the unequal top and bottom slice radii, including under rotation and scaling. The highlighted slice thickness is schematic.

Native TikZ stroke and arrow defaults



No line width is specified in this picture. The ordinary TikZ node, package nodes, force arrow, and heat-transfer rays share the document's native stroke width and latex arrow convention. Colors default to black and white. Authors can style their document using ordinary TikZ options and the package's `every ...` hooks.