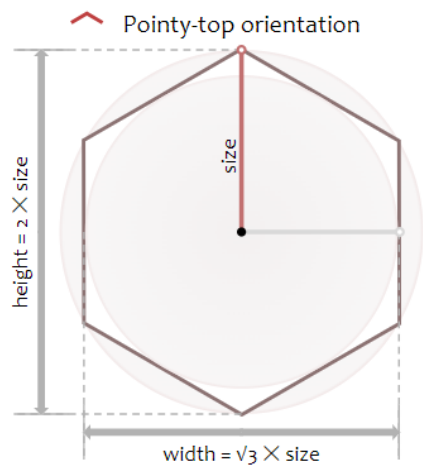


Converting cubic coordinates to (x,y):

$$\begin{bmatrix} x \\ y \end{bmatrix} = \text{size} \times \begin{bmatrix} \sqrt{3} & \sqrt{3}/2 \\ 0 & 3/2 \end{bmatrix} \times \begin{bmatrix} q \\ r \end{bmatrix}$$

This is how size is represented for pointy-top hexagons:



In the **pointy top** orientation, the horizontal distance between adjacent hexagon centers is $\text{horiz} = \text{width} = \sqrt{3} \times \text{size}$. The vertical distance is $\text{vert} = 3/4 \times \text{height} = 3/2 \times \text{size}$.

This is how pointy-tops are represented in an xy plane, by width:

