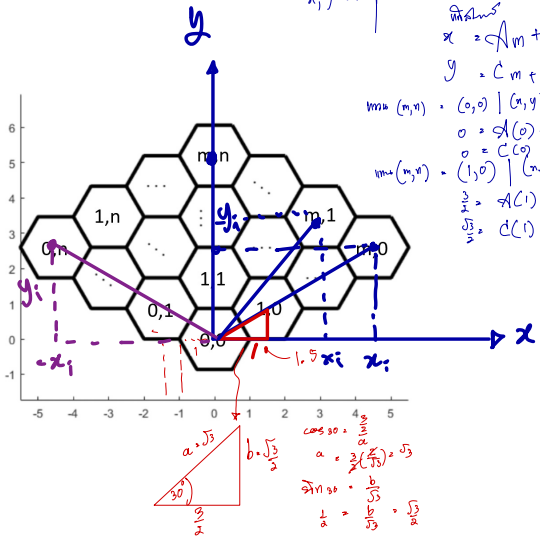
x, y ที่อยู่ที่ตำแหน่ง (m,n)

ทั่วไป

$$x = Am + Bn + C_1$$
$$y = Cm + Dn + C_2$$



$\cos 30 = \frac{\frac{3}{2}}{a}$

$a = \frac{3}{2}\left(\frac{2}{\sqrt{3}}\right) = \sqrt{3}$

$\sin 30 = \frac{b}{\sqrt{3}}$

$\frac{1}{2} = \frac{b}{\sqrt{3}} \Rightarrow b = \frac{\sqrt{3}}{2}$

$(m,n) = (0,0) \;\Big|\; (x,y) = (0,0)$

$0 = A(0) + B(0) + C_1 \;\Big|\; C_1 = 0$

$0 = C(0) + D(0) + C_2 \;\Big|\; C_2 = 0$

$(m,n) = (1,0) \;\Big|\; (x,y) = \left(\frac{3}{2}, \frac{\sqrt{3}}{2}\right)$

$\frac{3}{2} = A(1) + B(0) \rightsquigarrow A = \frac{3}{2}$

$\frac{\sqrt{3}}{2} = C(1) + D(0) \rightsquigarrow C = \frac{\sqrt{3}}{2}$

$(m,n) = (1,1) \;\Big|\; (x,y) = (0, \sqrt{3})$

$0 = \frac{3}{2}(1) + B(1)$

$B = -\frac{3}{2}$

$\sqrt{3} = \frac{\sqrt{3}}{2}(1) + D(1)$

$D = \frac{\sqrt{3}}{2}$

$$x = \frac{3}{2}m - \frac{3}{2}n$$
$$y = \frac{\sqrt{3}}{2}m + \frac{\sqrt{3}}{2}n$$

$$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{3}{2} & -\frac{3}{2} \\ \frac{\sqrt{3}}{2} & \frac{\sqrt{3}}{2} \end{bmatrix} \begin{bmatrix} m \\ n \end{bmatrix}$$

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pos to Index

$$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \frac{3}{2} & -\frac{3}{2} \\ \frac{\sqrt{3}}{2} & \frac{\sqrt{3}}{2} \end{bmatrix} \begin{bmatrix} m \\ n \end{bmatrix}$$

$$\begin{bmatrix} m \\ n \end{bmatrix} = \frac{1}{\frac{3\sqrt{3}}{4} + \frac{3\sqrt{3}}{4}} \begin{bmatrix} \frac{\sqrt{3}}{2} & \frac{3}{2} \\ -\frac{\sqrt{3}}{2} & \frac{3}{2} \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

$$\begin{bmatrix} m \\ n \end{bmatrix} = \frac{2}{3\sqrt{3}} \begin{bmatrix} \frac{\sqrt{3}}{2} & \frac{3}{2} \\ -\frac{\sqrt{3}}{2} & \frac{3}{2} \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$