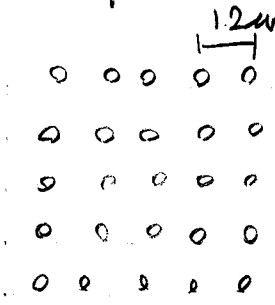
$\frac{2}{\sqrt{2}} \frac{\sqrt{2}}{3} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

Brillouin Zone: $-\frac{\pi}{a} < k < \frac{\pi}{a}$

Homework #2

reciprocal lattice vectors, reciprocal crystal, Brillouin zone.



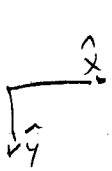
lattice: $a_1 = 1.2\,\mu m\,\hat{x}$

$a_2 = 1.2\,\mu m\,\hat{y}$

reciprocal vectors $b_1 = \frac{2\pi}{1.2\,\mu m} \cdot \frac{5}{3}\pi \frac{}{\mu m}\,\hat{x}$

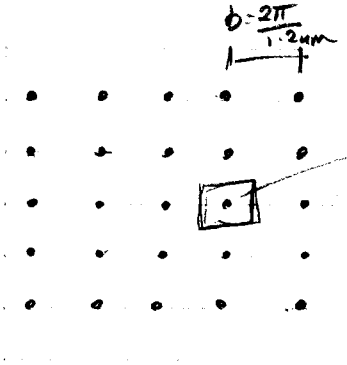
$b_2 = \frac{5}{2}\pi\,\mu m^{-1}\,\hat{y}$

reciprocal crystal

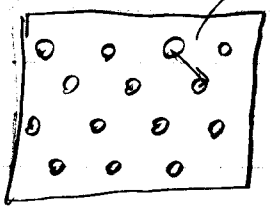


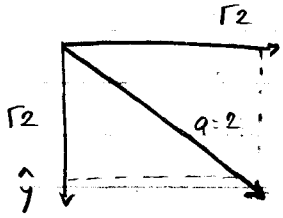
$b_1 = \frac{2\pi}{1.2\,\mu m}$

$b_2 = \frac{2\pi}{1.2\,\mu m}\,\hat{y}$



(11)





$q = \Gamma 2\,\hat{x} + \Gamma 2\,\hat{y}$

lattice vectors

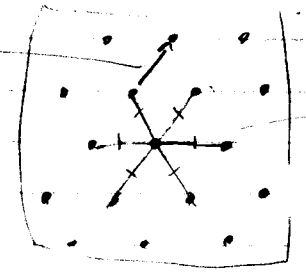
$a_1 = \Gamma 2\,\hat{x}$

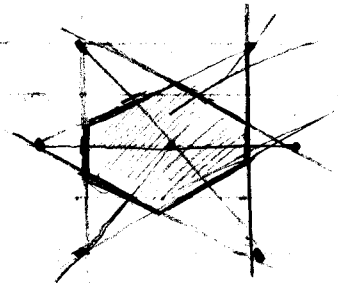
$a_2 = \Gamma 2\,\hat{y}$

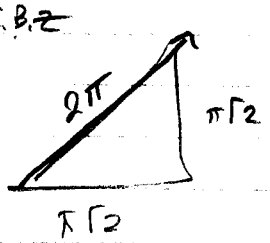
reciprocal: $b_1 = \frac{2\pi}{\Gamma 2}\hat{x} = \pi\Gamma 2\,\hat{x}$

$b_2 = \pi\Gamma 2\,\hat{y}$

$b = 2\pi\,\mu m^{-1}$







$\sqrt{2\pi^2 + 2\pi^2}$

$\sqrt{4\pi^2} = 2\pi$

$\pi^2 2 + \pi^2 2 - 4\pi^2$

$\Gamma \to 2\pi$