1. $v = 1 \times 10^{7}$ m/s

$a = 2 \times 10^{13}$ m/s^2

$F = ma$

$= 1.67 \times 10^{-27} \times 2 \times 10^{13}$

$= 3.34 \times 10^{-14}$ N

$F = qvB \sin\theta$

$B = \dfrac{F}{qv \sin\theta}$

$= \dfrac{3.34 \times 10^{-14}}{1.6 \times 10^{-19} \times 10^{7}}$

$= 0.0209$ T

$= 20.9 \times 10^{-3}$ T

$= 20.9$ mT

2.