

d) 60° ($\cos 60 = 1/2$)

ii) 90° ($\cos 90 = 0$).

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2) a) $F = Bqv = 5 \times 10^{-3} \times 1.6 \times 10^{-19} \times 2 \times 10^7$
 $= 1.6 \times 10^{-14} \text{ N}$.

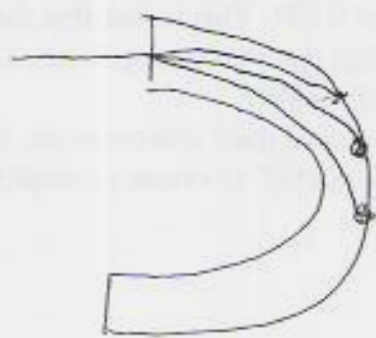
b) ~~$F =$~~ $a = \frac{F}{m} = \frac{1.6 \times 10^{-14}}{9.1 \times 10^{-31}} = 1.76 \times 10^{16} \text{ m/s}^2$

$a = \frac{v^2}{r} \Rightarrow r = \frac{v^2}{a} = \frac{(2 \times 10^7)^2}{1.76 \times 10^{16}} = 1.136 \times 10^2 \text{ m}$

4) a) Cos momentum = mv

v is same but m is greater for UF_6 .

b)



If the vacuum were not good, ions could undergo collisions with gas molecules and end up as trap