

Consider a ophere of radius R with uniform area charge density 5. This sphere is spinning about 2-axis with vi welocity. Calculate the magnetic force of attraction between the norther 4
Southern hemes pherase of Spring charged shell. Vector protental for the following Conditions ore gives:
A: = (1. HoRws) itsino & (for or ER) And = (1. HoR4 wo) & 8ino \$ (Jor 92) Salutions (01929) As we know & B FM V X A or Cloud All forms 2 8 - 1 0 (8 0 A(0)) n - 1 3 (x A(0)) 0 (2 - 10) e = Bin = Vx Ain = 1 (2 (98820 · MoRwo) ñ = 21 918in0 (20 3) - 1 (2 (x2800 MoRa) 09). 3 (2 n 3 n 3= 2 M. Rwe (cosin - 81000). Simplorly, Man D'S 18 E - 3 So A off, =

Bout = 2 Mo Rtwe (cox si + 8inco o).

Bout = Bin + Bout)

So Boujou = Bin + Bout)

Simplorly

Simplorl 1 = 01 F.M. Rwo (2 cos 0 2 - saco a) = MoRws (2 co20 si - 59,00 d)

SETE / / Astone Krown Firmy Has 98 (TINB) to restil to see - 1 where of the state of the control of Bayon = Ma Rw 6 62 cono 2 - 8140 6) (1210 col) V = (R 8000) cu - Pr. 11. 1 = 15 SECUMB) = \$ JUNE ROW FAM. 10 ... A Morus) 2 (000 - (Morus) 85,0 0 = MoR² 63 6 (89,20 - 97 + 2 89,0 Coso 6) $:F_z = q. (\vec{J} \times \vec{B})_z = \int \sigma \cdot d\alpha (\vec{J} \times \vec{B})_z$ = J6. (R2.812 O.do.da). Vx8/2 -More, (VxB)2 = MoR2w26 (Sin20 Cos 0 2 -28520 Cos 0 2) $= M_0 R^2 \omega^2 c \left(-\frac{3}{3} 8^2 n^2 O \cos 0 \hat{z} \right).$ = - M. R² w² o (8in²0 (000 2). $= - \frac{1}{2} \left(\frac{(R^2 \times 8^2 \times 0.0 \times 0.0$ =-Mo (R2w6)2.27 89630.cog 0. doConsidering 8900=+ 4 Cos 0.00 =d+

$$\int 89^{3}0 \cdot \cos 0 \cdot d0 = \int t^{3} \cdot dt = \frac{t^{4}}{4}$$

$$\int_{0}^{\pi/2} s_{1}^{2} = \int_{0}^{\pi/2} s_{1}^{2} = \int_{0$$

$$\frac{1}{4} \cdot \frac{1}{4} \left(R^2 \omega \varepsilon \right)^2 \frac{2}{2} \cdot \frac{1}{4}$$