Cowert from Cylindrical to Spherical. x=rcoso, x=Rsinoceso > v= Rsino. y= rsino , y = Rsin Dsino 2=2) 2= RCOSO $\frac{\partial ur}{\partial R} = \frac{\partial ur}{\partial r} \cdot \frac{\partial r}{\partial R} + \frac{\partial ur}{\partial \theta} \cdot \frac{\partial \theta}{\partial R} + \frac{\partial ur}{\partial \theta} \cdot \frac{\partial z}{\partial R}$ Now, = 3 (4xcos0 + Uysin0). 2(Rsind) + 3 (4xcos0 + Uy sho) . 20 = = (24x cos0 + 24y sin0). Sin0) + (24x cos0 + 4x (-sin0)+ 244 sin0 + 44 cos0) 20 $\Rightarrow \frac{\partial ur}{\partial R} = \left[\frac{\partial ux}{\partial r} \cos 0 + \frac{\partial uy}{\partial r} \sin 0 \right] \sin 0 + \left[\frac{\partial ux}{\partial R} \cos 0 - \frac{\partial ux}{\partial R} \sin 0 \right]$ + 244 SINO + 446050] 20

 $\Rightarrow \frac{3110}{30} = \frac{3110}{31} \cdot \frac{311}{30} + \frac{3110}{30} \cdot \frac{3270}{30} + \frac{3110}{30} \cdot \frac{3270}{30} = \frac{31}{310} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \sin \theta + \frac{1}{12} \log \theta \right) \cdot \frac{3}{30} \left(-\frac{1}{12} \cos \theta \right)$

= - Ux sind or - r sind oux - rux osho + 44coso or + reaso suy + ruy scores . sind DR + [-475140 20 - rsiho Detx - relix sigho + lycoso Dr 4 rcoso 244 + 1.44 3coso] = [-Uxsho -vsho dux + uycoso + vcoso duy] SIMP DR + (-UXSMB+UycosB.) Dr - VSIMB DUX + reaso 244 - ruxcoso - ruysino 100 OC OC OC OC OC VE THE SUE OC = 342. 36 (REAND) + 342.30 + 3423 (ROSA) = 31/2 - (3R siho+Rcoso) + 31/2 . 20 + 31/2 12 21/2 TR SIND + RCOSD), (2R COSD - SINDROSD) $\Rightarrow \frac{3412}{30} = \frac{342}{31} \left(\frac{3R. \sin \phi + R\cos \phi}{30} \right) + \frac{342}{30} \cdot \frac{30}{30} + \frac{3412}{30}$ (30 cost) - sh (cost)