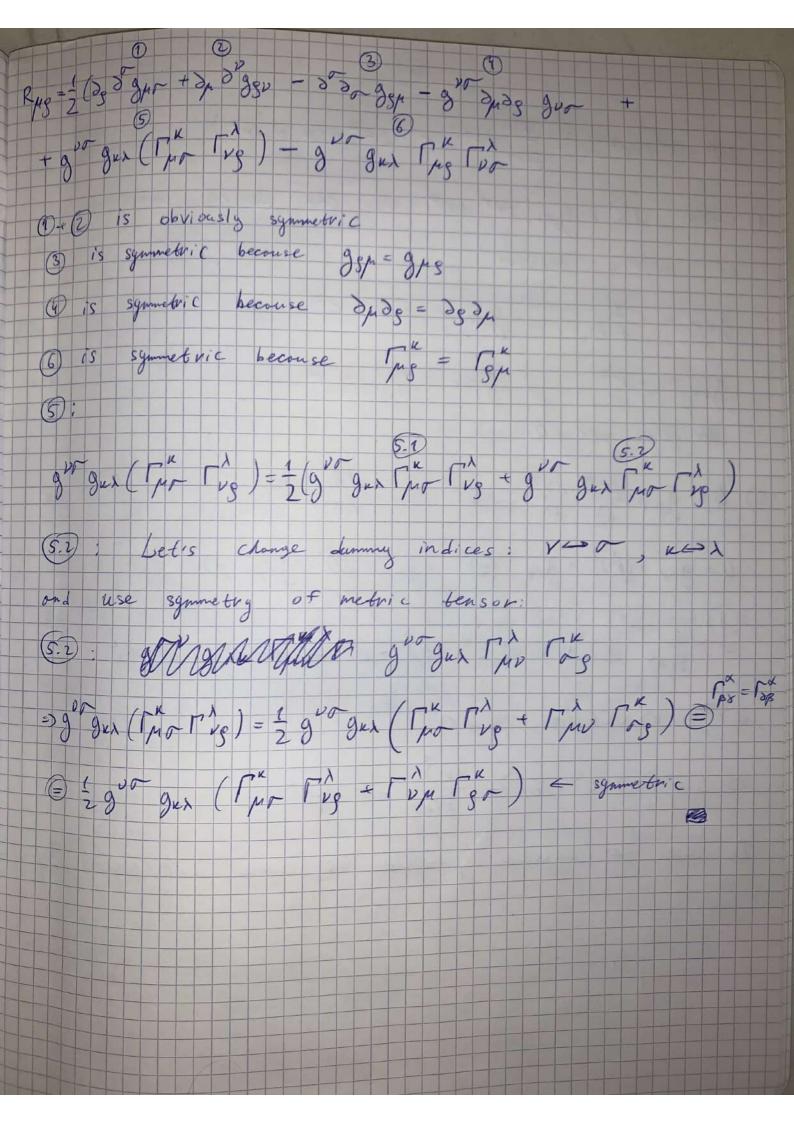
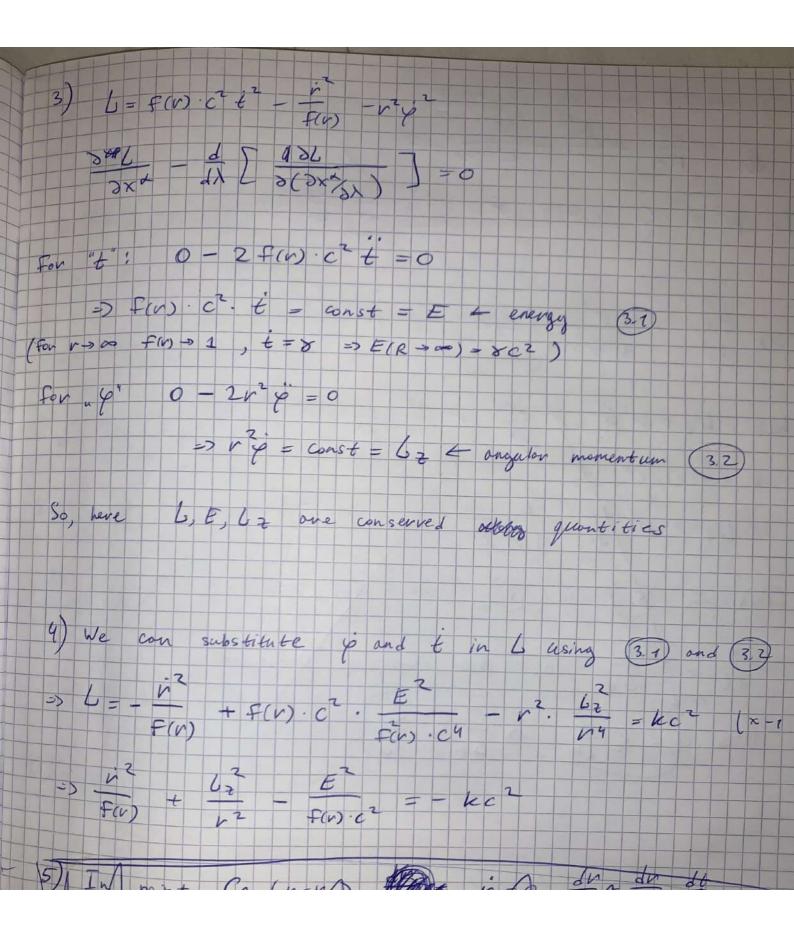
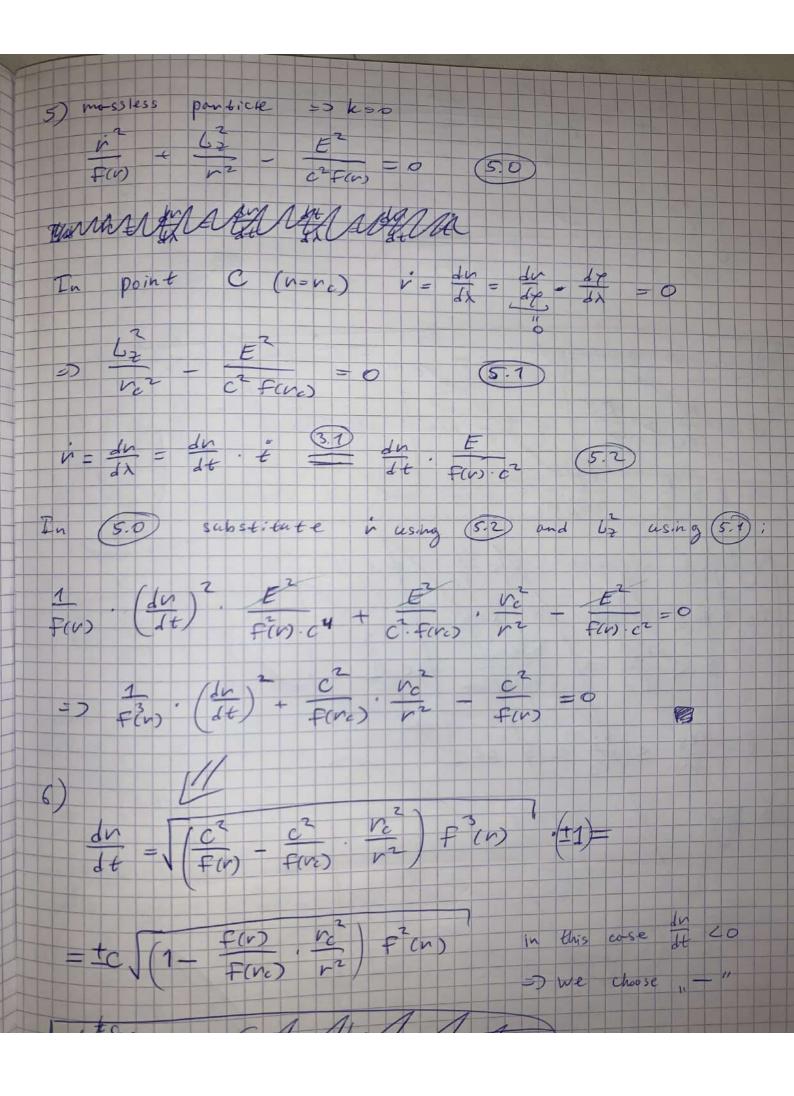


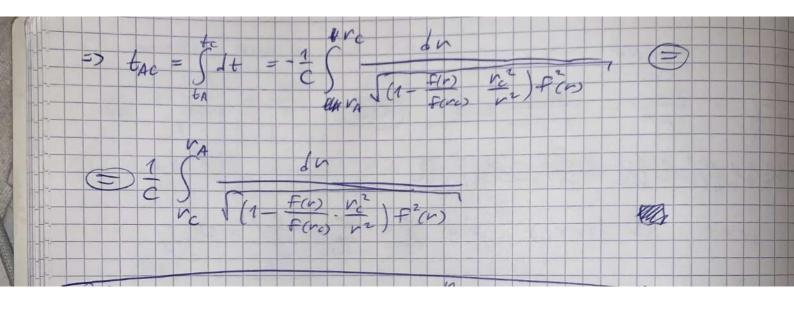
5 3 ( de gar + da gga - do gga 4) Olet's first do it in on easy way: RMV = gsx RMSVX Rugus = Ruing & and gst = gtg TO AM LOS CERTOS => Rmv = gis Ruins = Run RMUGO = = ( de du gho + du da gen - du de gen - dude gua) + gus (Frontes - Maria) 1xgva # Rug = 900 Ruy 80 = 1 (28) 9mo + 2m 2 980 - 20 38m SHES gropes gro) + groger ( pro l'is - l'is 1



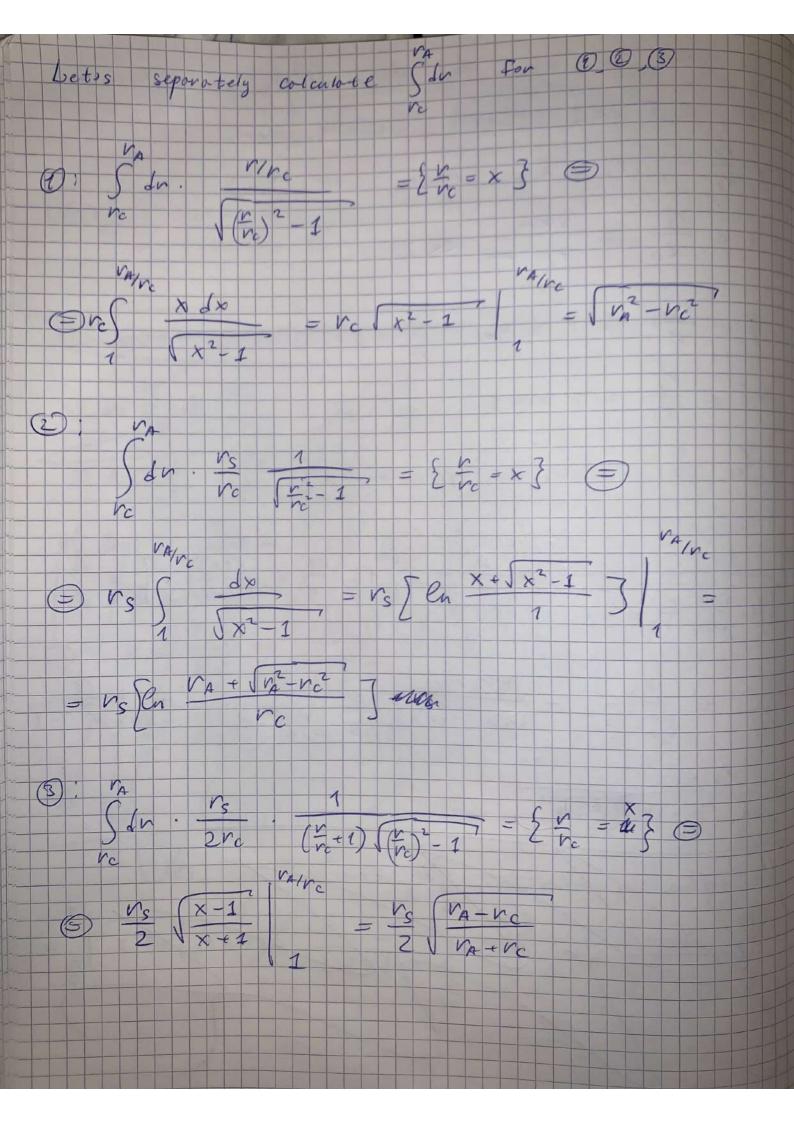
ds2 = f(w c2 dt2 - 1 du2 - v2 (102 + sin20 dp2) 1) since ds = gmu dx M dx v we can derive components of metric tensor: grn = - 1 gtt = F(4). C2 goo = - v2 ggg = - v2 sin2 0 2)  $L = g_{\mu\nu} \frac{4x^{\mu}}{4x} \frac{4x^{\nu}}{4x}$   $\frac{4A}{4x} = A$ 4 = grr · (r)2 + gtt · (t)2 + gop · (d)2 + gep · (x)2 = = -1 (i) + f(v) c2 (t) - v2 0 2 - v2 sin 2 y2  $\theta = \frac{\pi}{2}$  =>  $\sin \theta = 1$ ,  $\theta = 0$ =>  $L = f(r) \cdot c^{2} \cdot (t)^{2} - (r)^{3} - r^{2} \cdot (\phi)^{2}$ In case of massive particle we choose 1 = c (proper time)







this opproximation we need E, 8 LC 1. Let's evaluate them; 60 rs Ro 3 km << 1 = 2 <<1 Con use this approximation 8) rs + rs rc 7
r + rn(r+rc) ] (1- fine re2) Fine  $+ \frac{v_s}{\sqrt{v^2-v_c^2}} + \frac{v_s v_c}{2\sqrt{v_e v_c}\sqrt{v^2-v_c^2}}$ r nc [ ] - 1 Vs Vc 2 nc (m + 1) 5/2 2 - 1



(1) fin) 1/4 + 5 1/42 - ne2 @ Ms Cn [ Vc absence of relativistic effects we would get tac = LAC JV2-12 that insulano can get C C From (\*) if vs =0

